The Journal of the American Osteopathic Association

SEPTEMBER 1960 • VOLUME 60

Convention report number

Presidential acceptance address

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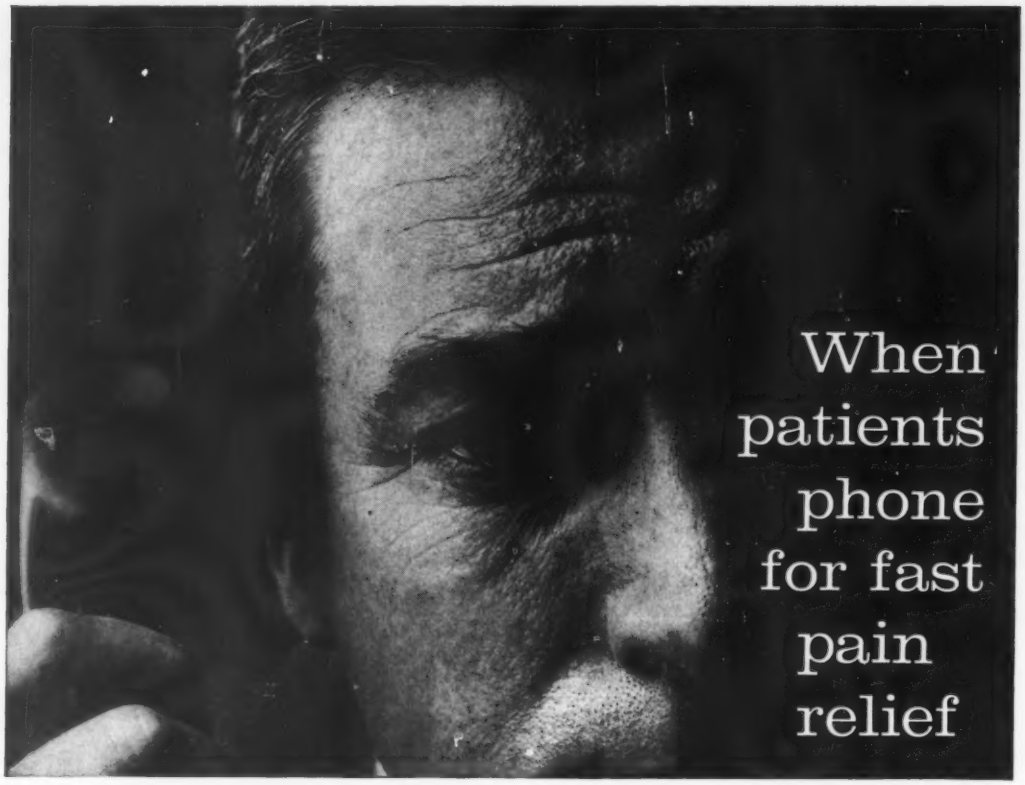

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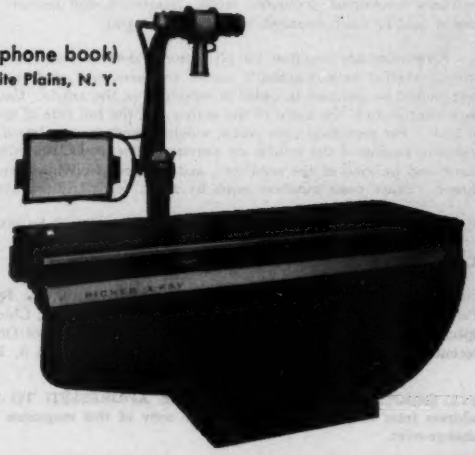

The Journal of the American Osteopathic Association

September 1960, Volume 60, Number 1

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THE JOURNAL OF THE AMERICAN OSTEOPATHIC ASSOCIATION is the official scientific publication of the American Osteopathic Association. Articles are accepted with the understanding that they have not been published or accepted for publication elsewhere.

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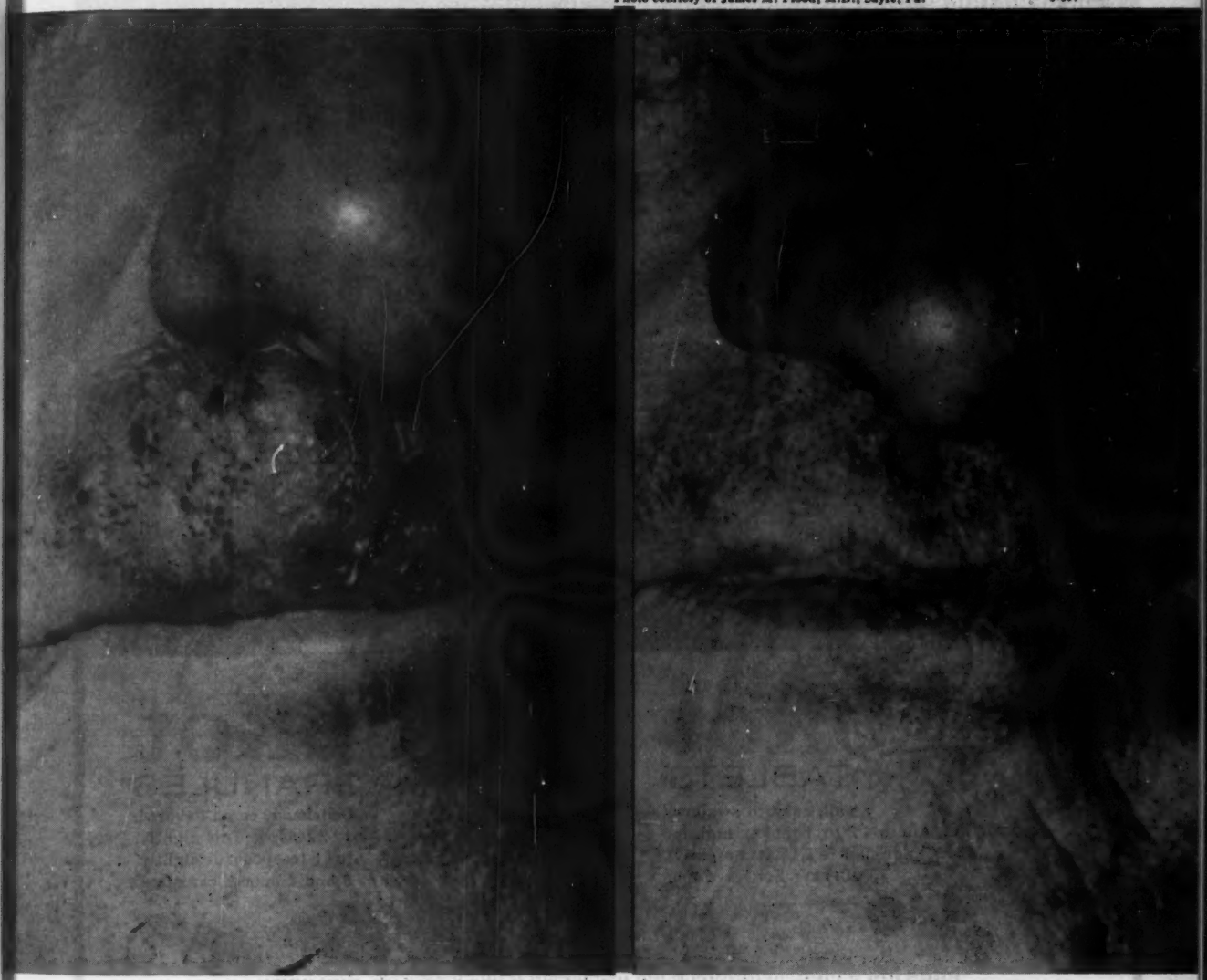

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CITED REFERENCES: 1. Campbell-Mackie, M.: Practitioner 183:742 (Dec.) 1959. 2. Wakeley, C.: M. World 83:318 (Oct.) 1955. 3. Dubow, E.: Arch. Pediat. 77:261 (June) 1960. 4. Monias, M., Christhilf, S. M., Jr.: The Management of Constipation in the Gravid Patient, Scientific Exhibit, American College of Obstetricians and Gynecologists; Atlantic City, April 6-8, 1959. 5. Turell, R.: Wisconsin M. J. 54:413 (Sept.) 1955. 6. Tirsch, H. S., Rosenfeld, S.: Am. J. Gastroenterol. 31:702 (June) 1959. 7. Steigmann, F.: "Newer Drugs in the Therapy of Constipation" in Disturbances in Gastrointestinal Motility, ed. J. Alfred Rider and H. C. Moeller, Springfield, Ill., Charles C Thomas, 1959, pp. 282-295.

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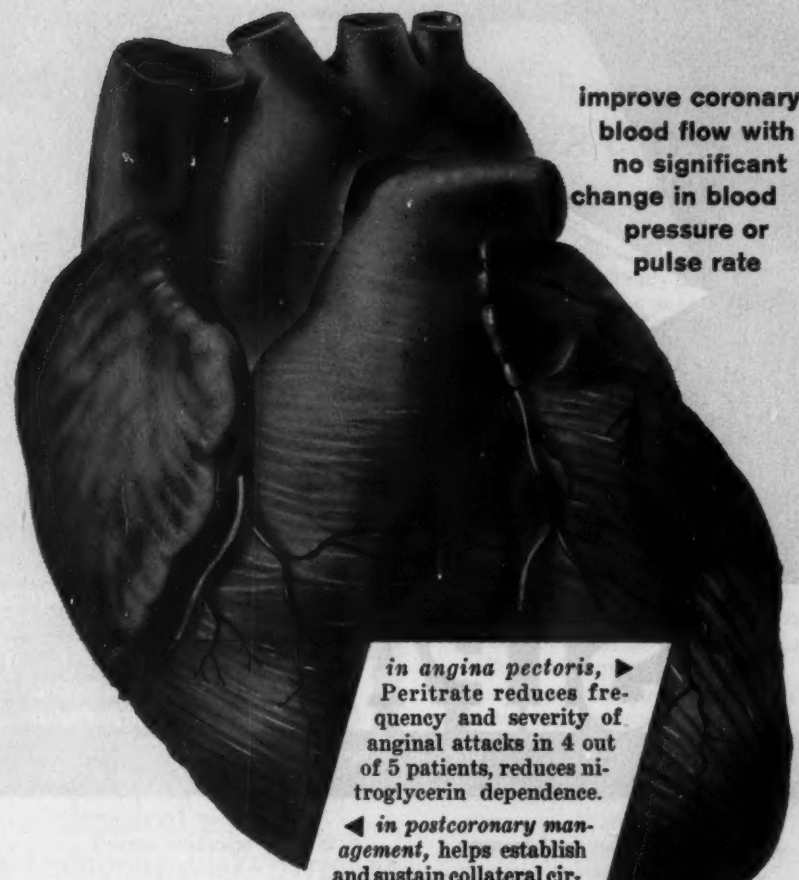

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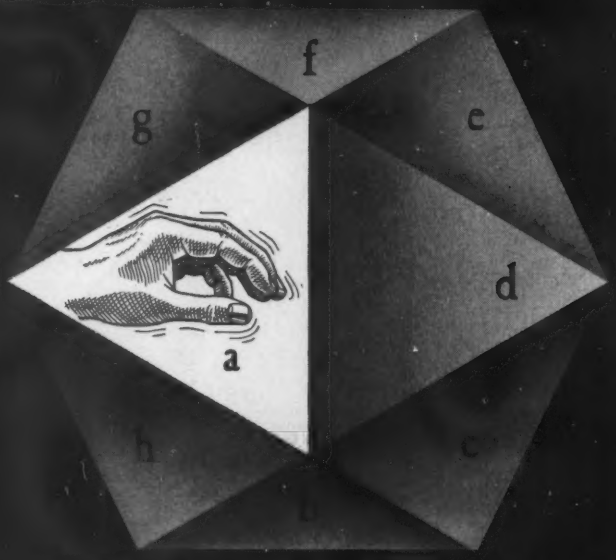

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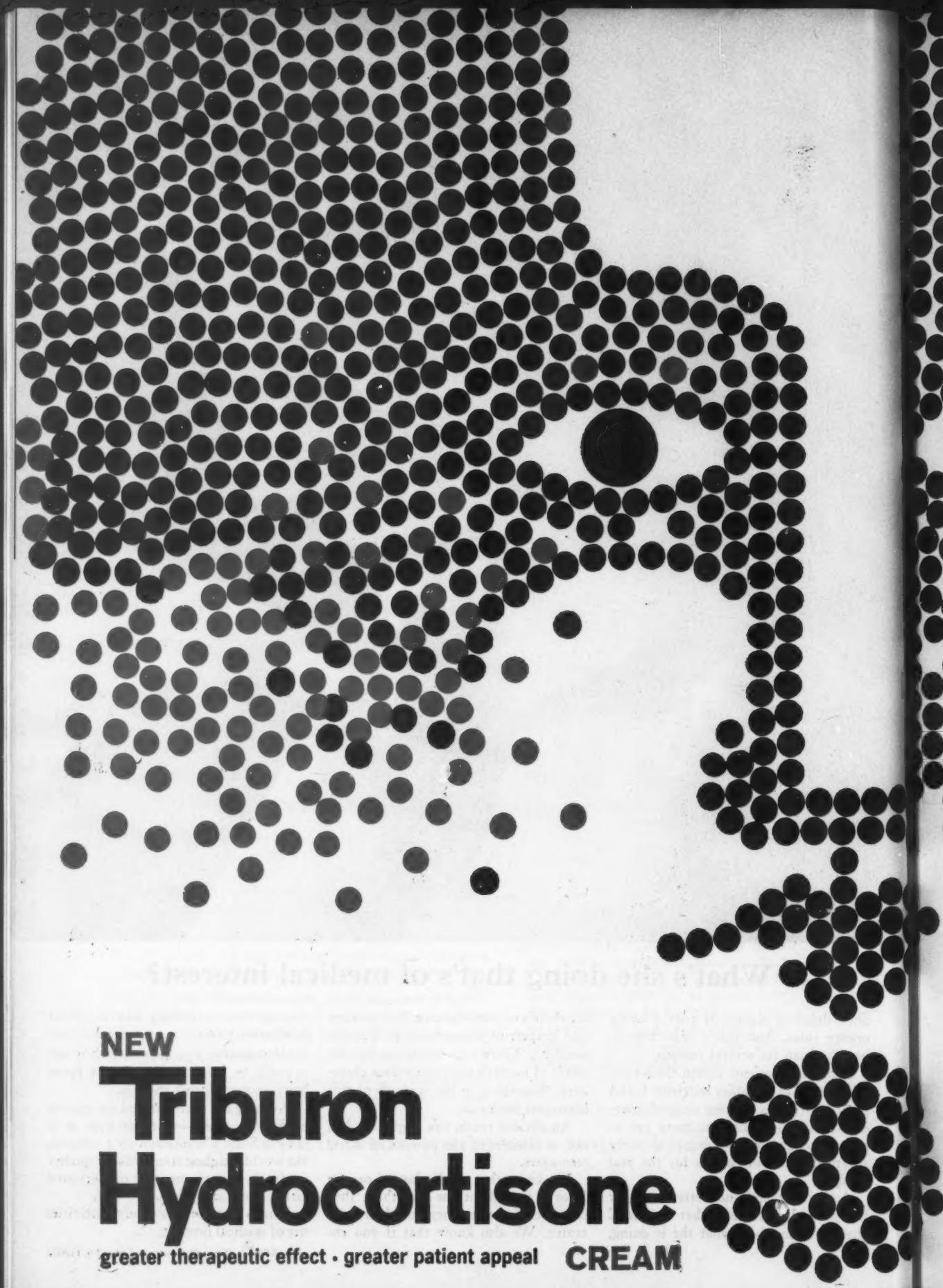
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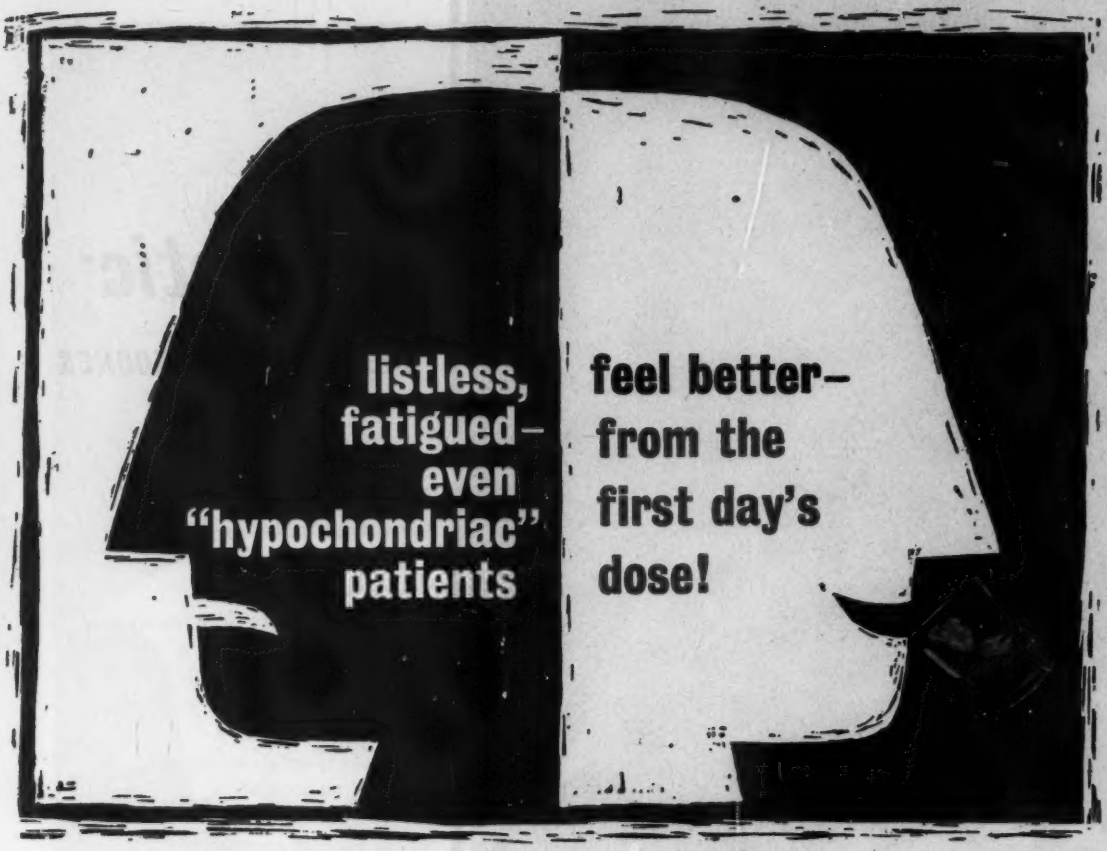

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2. E.E.N.T. Mo. 36:406, July, 1957.
3. Clin. Med. 4:699, June, 1957.

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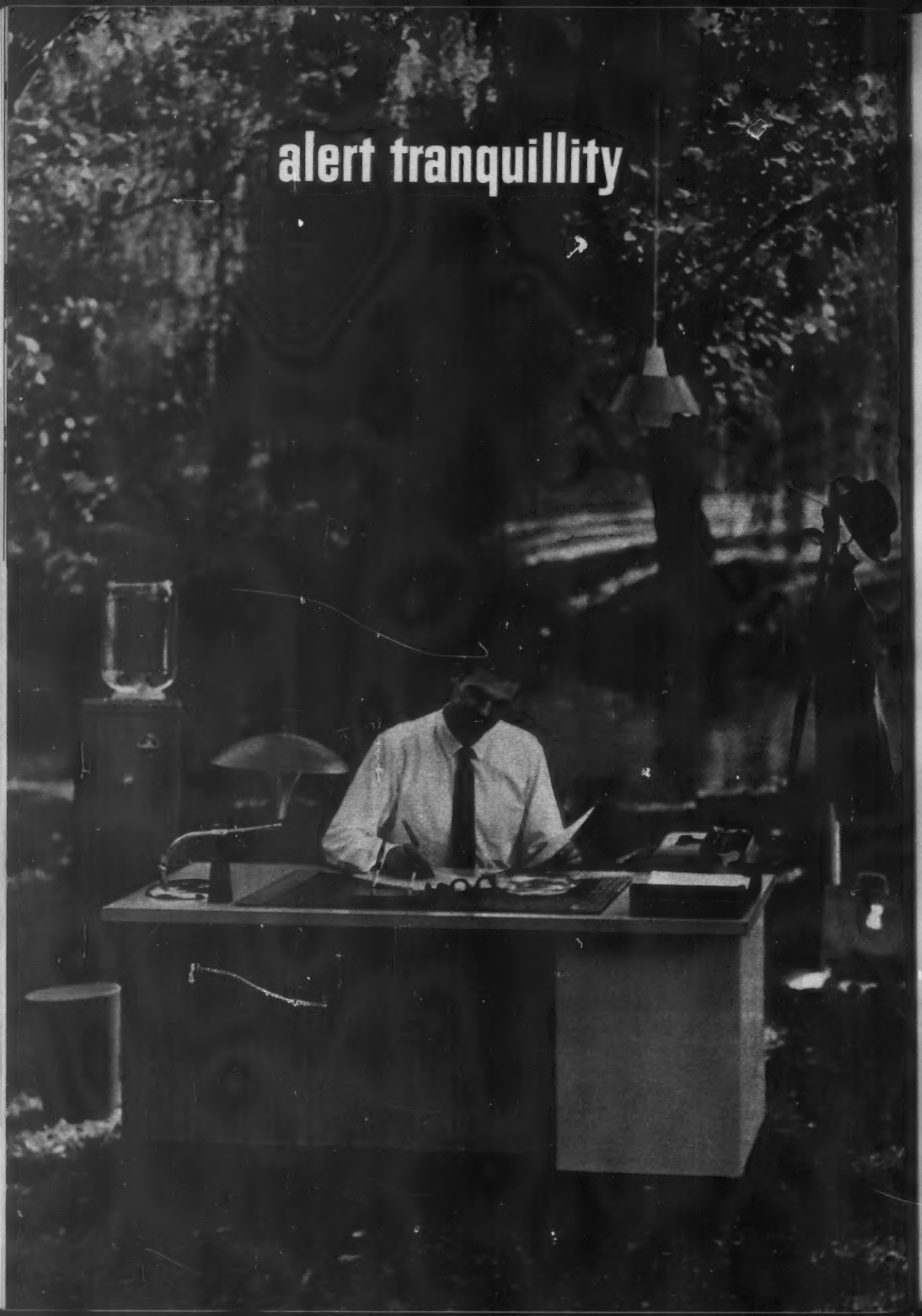
alert tranquillity

a new, improved, more potent relaxant for anxiety and tension

- effective in half the dosage required with meprobamate
- much less drowsiness than with meprobamate, phenothiazines, or the psychosedatives
- does not impair intellect, skilled performance, or normal behavior
- neither depression nor significant toxicity has been reported

alert tranquillity

Striatran®

EMYLCAMATE

- a familiar spectrum of antianxiety and muscle-relaxant activity
- no new or unusual effects—such as ataxia or excessive weight gain
- may be used in full therapeutic dosage even in geriatric or debilitated patients
- no cumulative effect
- simple, uncomplicated dosage, providing a wide margin of safety for office use

STRIATRAN is indicated in anxiety and tension, occurring alone or in association with a variety of clinical conditions.

Adult Dosage: One tablet three times daily, preferably just before meals. In insomnia due to emotional tension, an additional tablet at bedtime usually affords sufficient relaxation to permit natural sleep.

Supply: 200 mg. tablets, coated pink, bottles of 100.

While no absolute contraindications have been found for Striatran in full recommended dosage, the usual precautions and observations for new drugs are advised.

For additional information, write Professional Services, Merck Sharp & Dohme, West Point, Pa.

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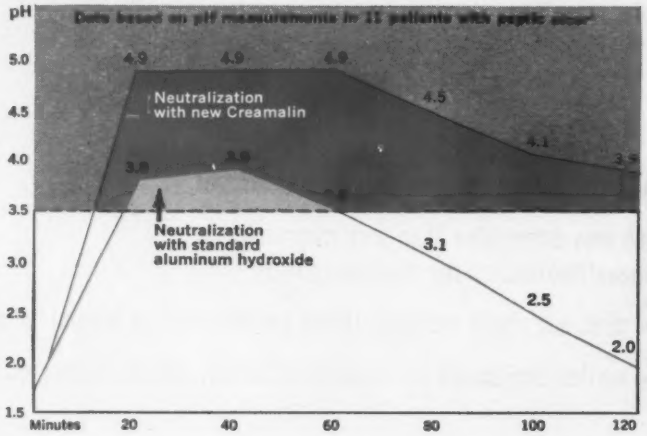
STRIATRAN IS A TRADEMARK OF MERCK & CO., INC.

At the site of peptic ulcer

Following determination of basal secretion, intragastric pH was continuously determined by means of frequent readings over a two-hour period.



neutralization is much faster and twice as long with

New CREAMALIN® ANTACID TABLETS

New proof in vivo[1] of the much greater efficacy of new Creamalin tablets over standard aluminum hydroxide has now been obtained. Results of comparative tests on patients with peptic ulcer, measured by an intragastric pH electrode, show that new Creamalin neutralizes acid from 40 to 65 per cent faster than the standard preparation. This neutralization (pH 3.5 or above) is maintained for approximately one hour longer.

New Creamalin provides virtually the same effects as a liquid antacid[2] with the convenience of a tablet.

Nonconstipating and pleasant-tasting, new Creamalin antacid tablets will not produce "acid rebound" or alkalosis.

Each new Creamalin antacid tablet contains 320 mg. of specially processed, highly reactive, short polymer dried aluminum hydroxide gel (stabilized with hexitol) with 75 mg. of magnesium hydroxide. Minute particles of the powder offer a vastly increased surface area for quicker and more complete acid neutralization.

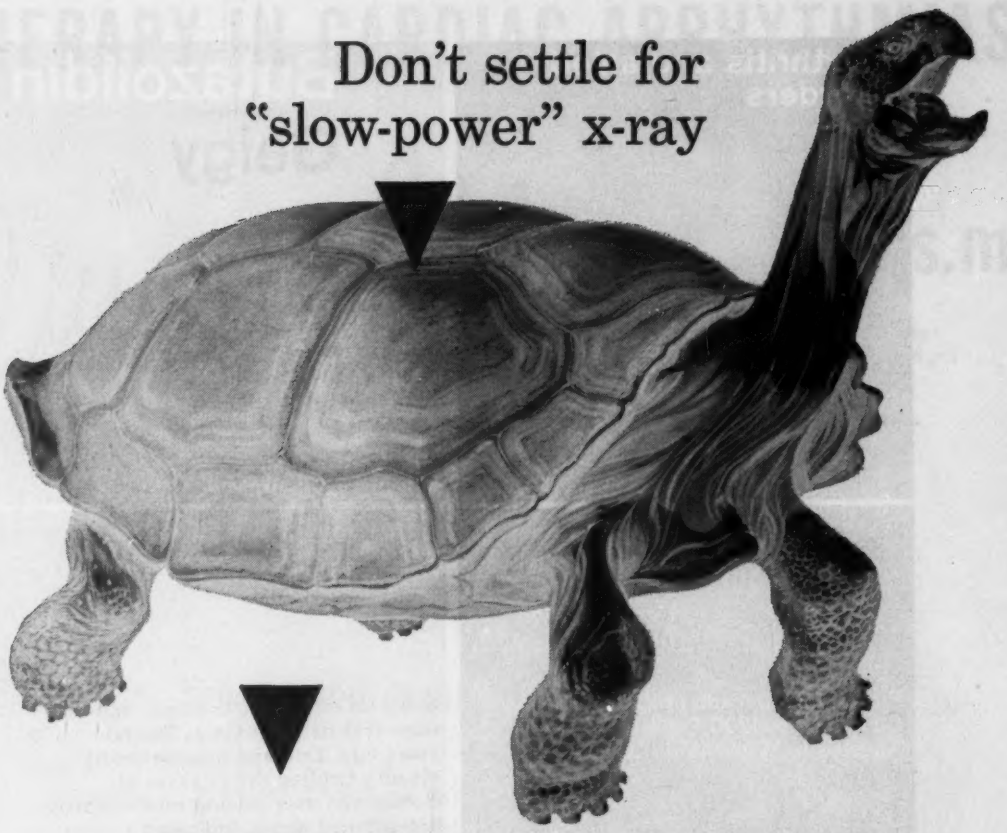
Dosage: Gastric hyperacidity — from 2 to 4 tablets as necessary. Peptic ulcer or gastritis — from 2 to 4 tablets every two to four hours. Tablets may be chewed, swallowed whole with water or milk, or allowed to dissolve in the mouth. How supplied: Bottles of 50, 100, 200 and 1000.

1. Data in the files of the Department of Medical Research, Winthrop Laboratories. 2. Hinkel, E. T., Jr.; Fisher, M. P., and Tainter, M. L.: J. Am. Pharm. A. (Scient. Ed.) 48:384, July, 1959.

Winthrop LABORATORIES
New York 18, N. Y.

for peptic ulcer ■ gastritis ■ gastric hyperacidity

Don't settle for "slow-power" x-ray



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When anatomical motion threatens to blur radiographs, the 200-ma Patrician can answer with extreme exposure speed, *twice* that of any 100-ma installation. Film images show improved diagnostic readability . . . retakes are fewer. And you'll find the G-E Patrician is like this in everything for radiography and fluoroscopy: built right, priced sensibly, *uncompromising* in assuring you all basic professional advantages. Full-size 81" table . . . independent tubestand . . . shutter limiting device . . . automatic tube protection . . . counterbalanced fluoroscope, x-ray tube and Bucky . . . full-wave x-ray output.

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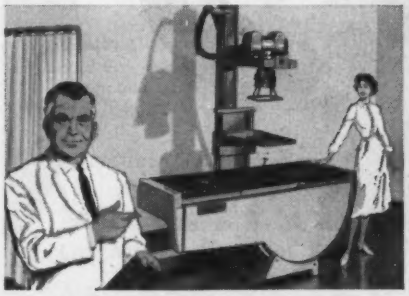

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Proved by a Decade of Experience
Confirmed by 1700 Published Reports
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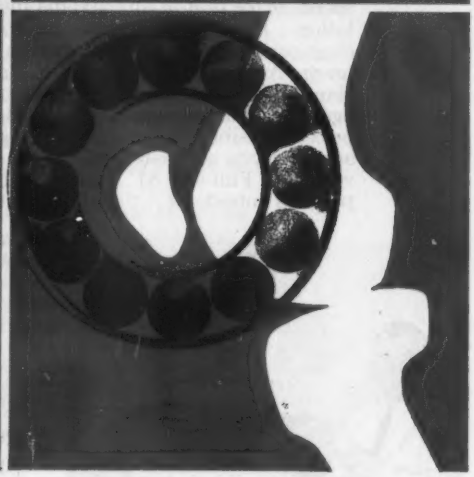
Since its anti-inflammatory properties were first noted in Geigy laboratories 10 years ago, time and experience have steadily fortified the position of Butazolidin as a leading nonhormonal anti-arthritic agent. Indicated in both chronic and acute forms of arthritis, Butazolidin is noted for its striking effectiveness in relieving pain, decreasing mobility and halting

Butazolidin®, brand of phenylbutazone: ted, sugar-coated tablets of 100 mg. Butazolidin® Alka: Orange and white apsules containing Butazolidin 100 mg.; ried aluminum hydroxide gel 100 mg.; agnesium trisilicate 150 mg.; omatropine methylbromide 1.25 mg.

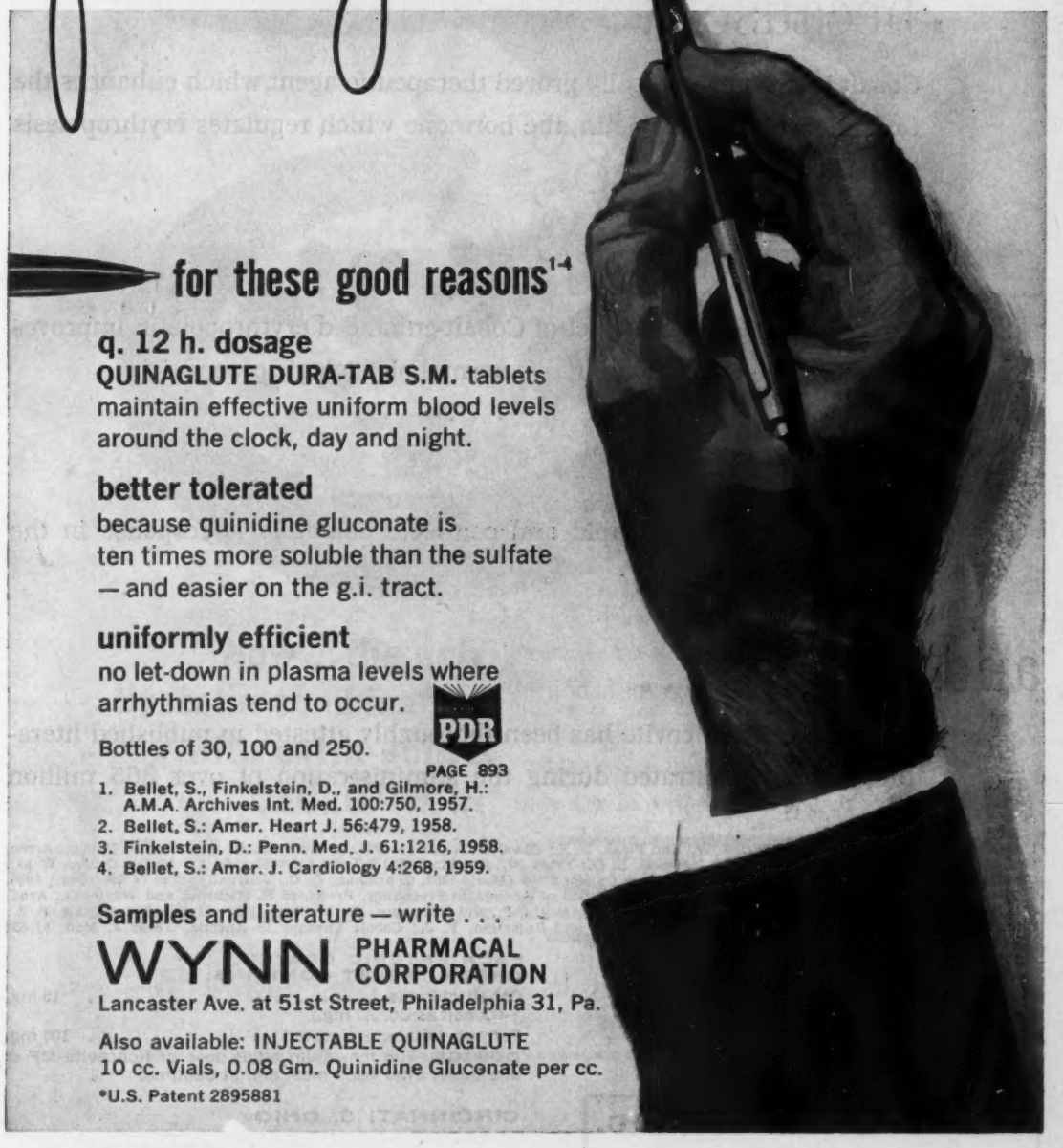


162-60

NOW WIDELY PRESCRIBED QUINIDINE THERAPY IN CARDIAC ARRHYTHMIAS

quinaglute T.M. dura-tab® s.m.

exclusive oral
Sustained Medication*
Quinidine Gluconate (5 gr.)



for these good reasons[1-4]

q. 12 h. dosage
QUINAGLUTE DURA-TAB S.M. tablets maintain effective uniform blood levels around the clock, day and night.

better tolerated
because quinidine gluconate is ten times more soluble than the sulfate — and easier on the g.i. tract.

uniformly efficient
no let-down in plasma levels where arrhythmias tend to occur.

PDR
PAGE 893

Bottles of 30, 100 and 250.

1. Bellet, S., Finkelstein, D., and Gilmore, H.: A.M.A. Archives Int. Med. 100:750, 1957.
2. Bellet, S.: Amer. Heart J. 56:479, 1958.
3. Finkelstein, D.: Penn. Med. J. 61:1216, 1958.
4. Bellet, S.: Amer. J. Cardiology 4:268, 1959.

Samples and literature — write . . .

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Lancaster Ave. at 51st Street, Philadelphia 31, Pa.

Also available: INJECTABLE QUINAGLUTE
10 cc. Vials, 0.08 Gm. Quinidine Gluconate per cc.

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RONCOVITE®-MF IS RAPIDLY BECOMING THE DRUG OF CHOICE IN ANTI-ANEMIA THERAPY...

because...

Cobalt is the only clinically proved therapeutic agent which enhances the formation of erythropoietin, the hormone which regulates erythropoiesis in the body.[1-3]

because...

Roncovite through the effect of Cobalt-enhanced erythropoietin improves iron utilization by activating this normal physiologic process.[3-4]

because...

The result is a more rapid and complete hematologic response in the anemic patient...[5-9]

and because...

The safety of Roncovite has been thoroughly attested in published literature and demonstrated during the administration of over 365 million doses.[6,10,11]

1. Goldwasser, E.; Jacobson, L. O.; Fried, W., and Plzak, L. F.: Blood *13*:55 (Jan.) 1958. 2. Murdock, H. R. Jr.: Am. Pharm. Assoc. (Sci. Ed.) *48*:140, 1959. 3. Goldwasser, E.; Jacobson, L. O.; Fried, W., and Plzak, L.: Science *125*:1085 (May 31) 1957. 4. Center, W. M.: Clin. Med. *7*:713 (April) 1960. 5. Holly, R. G.: Obst. & Gynec. *9*:299 (Mar.) 1957. 6. Ausman, D. C.: Journal-Lancet *76*:290 (Oct.) 1956. 7. Flynn, R. T.: Therapy with Cobalt and Iron for Correction of Anemia in Pregnancy, Presented at Michigan and Wayne Co. Acad. GP. Postgrad. Clinic, Detroit, Mich., Nov. 11-12, 1959. 8. Tevetoglu, F., and Ozkaragoz, K.: M. Times *86*:81 (Jan.) 1958. 9. Craig, P. E.: Clin. Med. *6*:597 (April) 1959. 10. Hill, J. M.; LaJous, J., and Sebastian, F. J.: Cobalt Therapy in Anemia, Texas J. Med. *51*:686 (Oct.) 1955. 11. Tevetoglu, F.: J. Pediat. *49*:46 (July) 1956.

Please write for monograph, "The Hormone Erythropoietin." Roncovite literature also available on request.

EACH ENTERIC COATED, GREEN TABLET CONTAINS:

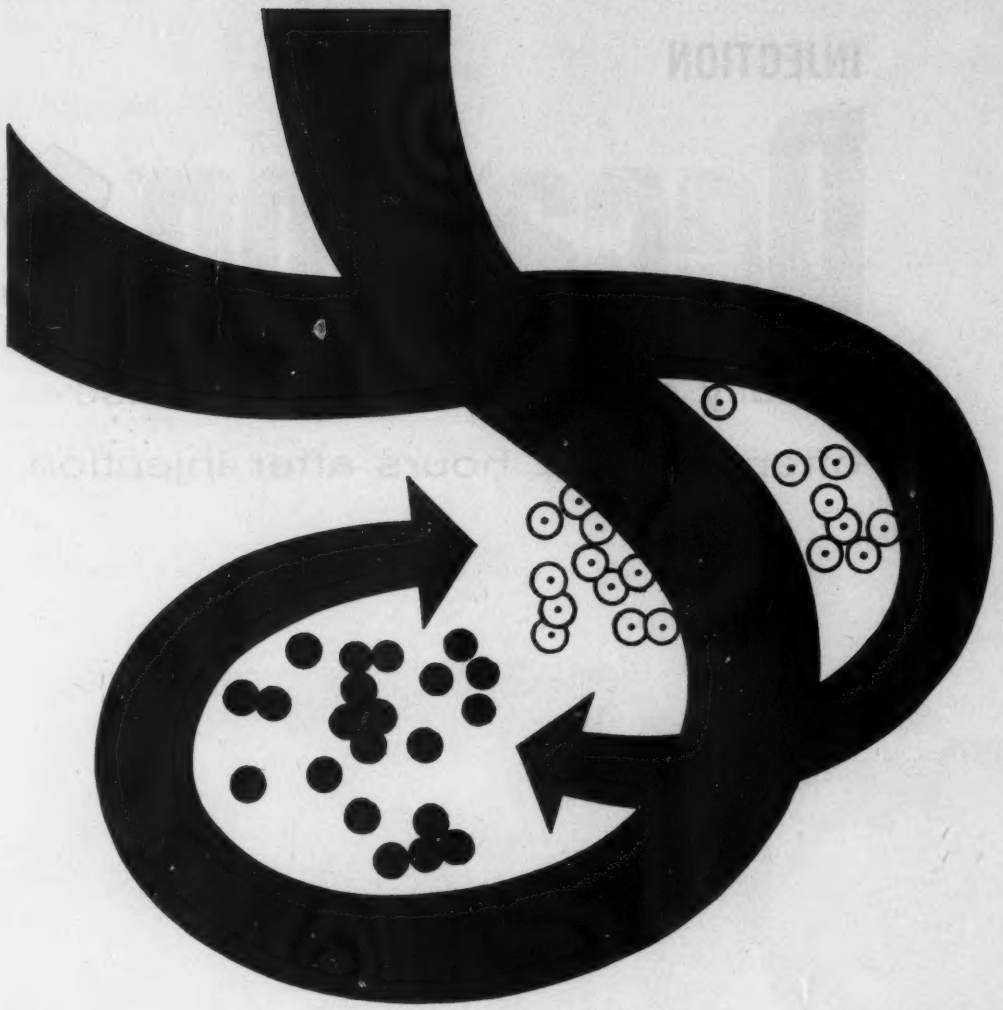
Cobalt chloride . . . . . 15 mg.
(Cobalt as Co. 3.7 mg.)
Ferrous sulfate, exsiccated . . . . . 100 mg.

DOSAGE: The maximum adult dose of Roncovite-MF is one tablet after each meal and at bedtime.

LLOYD BROTHERS, INC.

CINCINNATI 3, OHIO

A-24



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CAPSULES, *150 mg. DECLOMYCIN Demethylchlortetracycline HCl and 250,000 units Nystatin.*
DOSAGE: *average adult, 1 capsule four times daily.*

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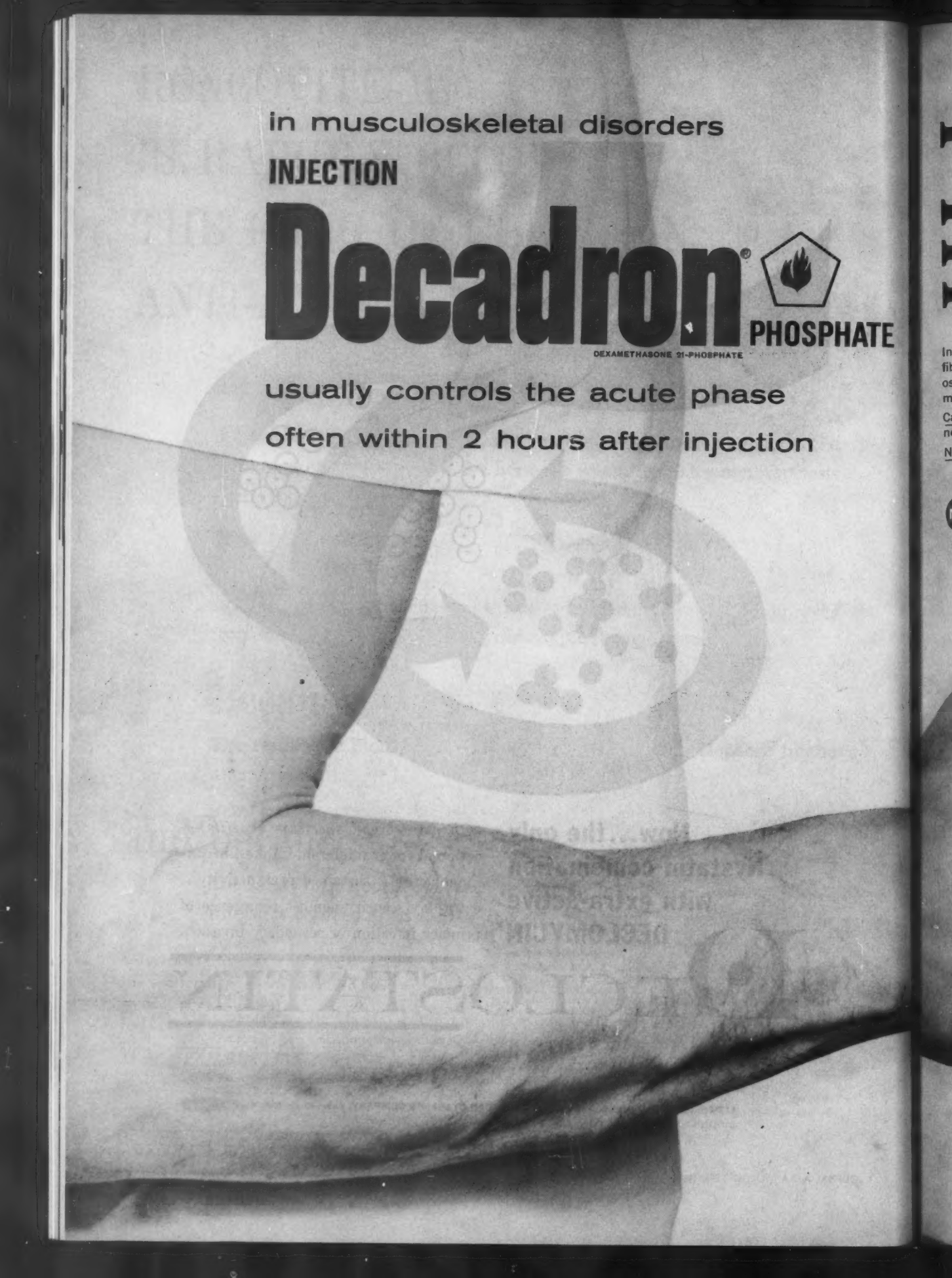
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Decadron®
PHOSPHATE
DEXAMETHASONE 21-PHOSPHATE
usually controls the acute phase
often within 2 hours after injection

THE DIRECT APPROACH — rapid relief and prolonged effect—complete solubility affords quick diffusion of the therapeutic dose

THE DIRECT APPROACH — mg. for mg. the most active steroid

THE DIRECT APPROACH — passes easily through small-bore needles

THE DIRECT APPROACH — needs no reconstitution—no refrigeration

Injection DECADRON Phosphate can be used in strains and sprains, bursitis, fibrositis, rheumatoid arthritis, traumatic arthritis, acute gouty arthritis, osteoarthritis, osteochondritis, "trigger" points (localized painful areas in muscles), tendinitis, whiplash injuries (acute), and muscle trauma.

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DOSAGE AND ADMINISTRATION:
Injection DECADRON Phosphate is ready for immediate use intramuscularly or intra-articularly.
Dosage varies from 0.4 to 6 mg. or more depending on the nature and severity of the condition.

SUPPLIED:
5 cc. vials with 4 mg. dexamethasone 21-phosphate as the disodium salt per cc.

Additional information on Injection DECADRON Phosphate is available at your request.

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Proven

in over five years of clinical use and
more than 750 published clinical studies

Effective

for relief of anxiety and tension

Outstandingly Safe

- simple dosage schedule produces rapid, reliable tranquilization without unpredictable excitation
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- does not impair mental efficiency or normal behavior

Miltown®

meprobamate (Wallace)

Usual dosage: One or two 400 mg. tablets t.i.d.
Supplied: 400 mg. scored tablets, 200 mg. sugar-coated tablets; or as MEPROTABS®– 400 mg. *unmarked*, coated tablets.

WALLACE LABORATORIES / *New Brunswick, N. J.*

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Blood pressure that goes up with stress often comes down with SERPASIL®

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One reason that many cases of hypertension respond to Serpasil is that many cases are associated with stress. Stress situations produce stimuli which pass through the sympathetic nerves, constricting blood vessels, and increasing heart rate. Hyperactivity of the sympathetic nervous system may elevate blood pressure; if prolonged, this may produce frank hypertension. By blocking the flow of excessive stimuli to the sympathetic nervous system, Serpasil guards against stress-induced vasoconstriction, brings blood pressure down slowly and gently.

In mild to moderate hypertension, Serpasil is basic therapy, effective alone "... in about 70 per cent of cases..."*

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In all grades of hypertension, Serpasil may be used as a background agent. By permitting lower dosage of more potent antihypertensives, Serpasil minimizes the incidence and severity of their side effects.

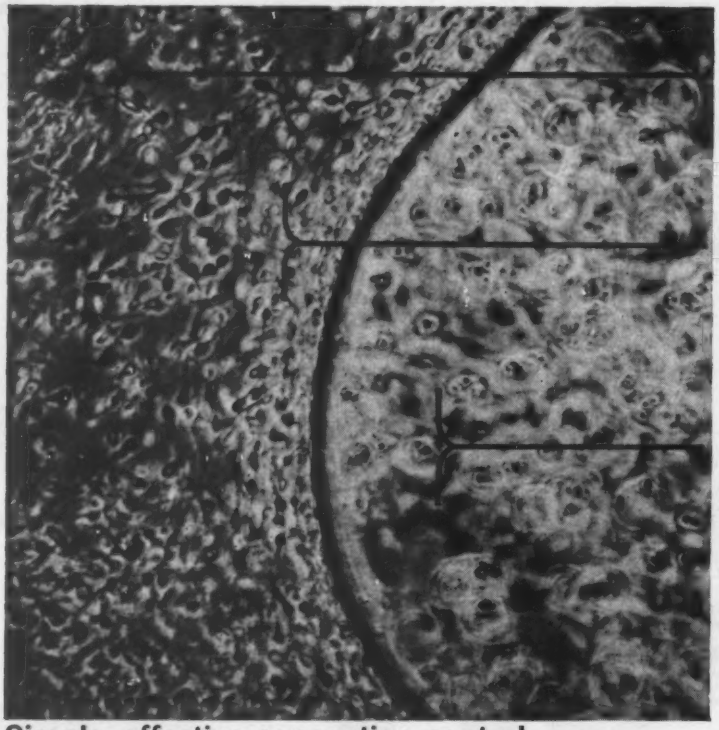
CIBA

*Coan, J. P., McAlpine, J. C., and Boone, J. A.: J. South Carolina M. A. 51:417 (Dec.) 1955.

Complete information available on request.

New microphotographs illustrate unique action of *Immolin*® Vaginal Cream-Jel

snowy white — dry — static — free of messiness



ALIVE
in seminal fluid —
spermatozoa viable and highly motile before reaching interface of seminal fluid and IMMOLIN Matrix

IMMOBILIZED
near the IMMOLIN Matrix —
spermatozoa approaching the edge of the IMMOLIN Matrix immediately become immobilized and nonreproductive

DEAD
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spermatozoa dead and buried—killed within the distance they normally travel in one-quarter of a second

Simple, effective conception control— without an occlusive device [1,2]

1. Goldstein, L. Z.: Obst. & Gynec. 10:133 (Aug.) 1957.
2. Finkelstein, R., and Goldberg, R. B.: Am. J. Obst. & Gynec. 78:657 (Sept.) 1959.

Active Ingredients: Methoxypolyoxyethyleneglycol 550 laurate 5%, Nonylphenoxypolyethoxyethanol 1%.

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1,928 published cases in the two years since TAO was released for general use show:

94.3% effectiveness in respiratory infections (617 cases including tonsillitis, staphylococcal and streptococcal pharyngitis, bronchitis, infectious asthma, broncho-pneumonia, lobar pneumonia, bronchiectasis, lung abscess, otitis.) **You can count on TAO.**

92% effectiveness in skin and soft tissue infections (900 cases including pyoderma, impetigo, acne, infected skin disorders, wounds, incisions and burns, furunculosis, abscess, cellulitis, chronic ulcer, adenitis.) **You can count on TAO.**

87.1% effectiveness in genitourinary infections (349 cases including urethritis, cystitis, pyelitis, pyelonephritis, orchitis, pelvic inflammation, acute gonococcal urethritis, lymphogranuloma venereum.) **You can count on TAO.**

75.8% effectiveness in diverse infections (62 cases including fever of undetermined origin, peritoneal abscess, osteitis, periarthritis, septic arthritis, staphylococcal enterocolitis, gastroenteritis, carriers of staphylococci.) **You can count on TAO.**

95.6% of 1,928 cases free of side effects—in the remaining 4.4%, reactions were chiefly mild gastrointestinal disturbances which seldom necessitated discontinuance of therapy.

*In 884 of 1,928 cases the causative organisms were mostly staphylococci. The majority of clinical isolates were found to be resistant to at least one of the commonly used antibiotics and many patients had failed to respond to previous therapy with one or more antibiotics. **TAO proved 93.4% effective in these 884 cases.**

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DOSAGE: varies according to severity of infection. Usual adult dose—250 to 500 mg. q.i.d. Usual pediatric dose: 3-5 mg./lb. body weight every 6 hours.

NOTE: In some children, when TAO was administered at considerably higher than therapeutic levels for extended periods, transient jaundice and other indications of liver dysfunction have been noted. A rapid and complete return to normal occurred when TAO was withdrawn.

SUPPLY: TAO CAPSULES—250 mg. and 125 mg., bottles of 60. TAO ORAL SUSPENSION—125 mg. per 5 cc. when reconstituted, palatable cherry flavor, 60 cc. bottles. TAO PEDIATRIC DROPS—100 mg. per cc. when reconstituted, flavorful; special calibrated dropper, 10 cc. bottles. INTRAMUSCULAR or INTRAVENOUS—10 cc. vials, as oleandomycin phosphate.

OTHER TAO FORMULATIONS ALSO AVAILABLE: TAO®-AC (Tao, analgesic, antihistaminic compound) capsules, bottles of 36. TAOMID® (Tao with Triple Sulfas)—tablets, bottles of 60. Oral Suspension—60 cc. bottles.

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economical maintenance therapy in atopic dermatoses

Long-term use of topical steroids has real advantages in most eczematous diseases; but this means daily applications for many weeks and even months after visible signs of the disease have disappeared.[1] The 0.25% hydrocortisone topicals afford therapeutic effectiveness at a fraction of the cost.[2]

CORT-DOME®
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0.25% micronized hydrocortisone alcohol in the exclusive ACID MANTLE® vehicle.

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The exclusive ACID MANTLE vehicle potentiates the ingredients in DOME preparations . . . restores and maintains the normal protective acidity of the skin...and facilitates healing.

Available as CREMES in 1 oz. tubes, 4 oz. and 1 lb. jars; and as LOTIONS in 4 fl. oz. bottles.

These preparations are also available with higher hydrocortisone concentrations.

1.) Stoughton, R. B.: Report To The Council; Steroid Therapy In Skin Disorders, J.A.M.A. 170:1311-1315 (July 11) 1959. 2.) Goodman, H.: Concentration of Topical Medications Dispersed in Evaporating Vehicles with Particular Reference to Hydrocortisone Alcohol, Clin. Med. 6:781-784 (May) 1959.

World Leader in Dermatologicals
DOME CHEMICALS INC.
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Now—All cold symptoms can be controlled

Tussagesic

timed-release tablets

Controls congestion
with Triaminic,[1,2,3] the leading oral nasal decongestant.

Controls aches and fever
with well-tolerated APAP, non-addictive analgetic[4] and excellent antipyretic.[5]

Each TUSSAGESIC Tablet provides:

TRIAMINIC®	50 mg.
(phenylpropanolamine HCl	25 mg.
pheniramine maleate	12.5 mg.
pyrilamine maleate	12.5 mg.)
Dormethan (brand of dextromethorphan HBr)	30 mg.
Terpin hydrate	180 mg.
APAP (N-acetyl-p-aminophenol)	325 mg.

References: 1. Lhotka, F. M.: Illinois M. J. 112:259 (Dec.) 1957. 2. Fabricant, N. D.: E.E.N.T. Monthly 37:460 (July) 1958. 3. Farmer, D. F.: Clin. Med. 5:1183 (Sept.) 1958. 4. Bonica, J. J.: in Drugs of Choice, Mosby, St. Louis, 1958, p. 272. 5. Dascomb, H. E.: in Current Therapy, Saunders, Phila., 1958, p.78. 6. Bickerman, H. A.: in Drugs of Choice, Mosby, St. Louis, 1958, p.547.

Controls cough centrally
with non-narcotic Dormethan, possessing "amply demonstrated" antitussive activity,[6] as effective as codeine.

Liquefies tenacious mucus
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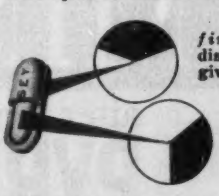
Prompt and prolonged relief because of this special "timed release" design:



first — the outer layer dissolves within minutes to give 3 to 4 hours of relief

then — the inner core releases its ingredients to sustain relief for 3 to 4 more hours

Dosage: One tablet in the morning, midafternoon and at bedtime. Pediatric dosage chart for Tussagesic Suspension available on request.

TUSSAGESIC SUSPENSION provides palatability and convenience which make it especially attractive to children and other patients who prefer liquid medication.

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urinary pain? frequency?

STOPS IN 30 MINUTES!

after the first dose of

PYRIDIUM®

brand of phenylazo-diamino-pyridine HCl

Patients on Pyridium experience welcome relief from urinary pain, burning, frequency and urgency—usually within 30 minutes. And Pyridium may be given with *any* urinary antibacterial. In fact, its recommended daily dosage of two 0.1-Gm. tablets t.i.d. provides a greater analgesic effect in adults than the recommended daily dosage of many fixed antibacterial-analgesic combinations. Because Pyridium is extremely well tolerated, you can provide pain relief until the underlying infection is completely controlled with the antibacterial of your choice. So next time you see a patient with a painful urinary infection, prescribe Pyridium.

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MORRIS PLAINS, N.J.

PY-6P05

recurring infections? systemic reactions?

HARDLY EVER!

in urologic patients taking MANDELAMINE®

brand of methenamine mandelate

This is why Mandelamine is a most effective urinary antibacterial, especially for stubborn disorders. Urine-specific Mandelamine eradicates most pathogens commonly encountered in chronic urinary infections—even strains resistant to antibiotics and sulfonamides. Mandelamine—antibacterial, but *not* an antibiotic—does not produce resistant mutants. And systemic reactions are rarely seen. Mandelamine... effective, well-tolerated, economical. Average adult dose, 2 Mandelamine Hafgrams® q.i.d.

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MA-6P08

Hard filled capsules in bottles of 30.

4 mg.

Medrol* Medules†

pH-patterned slow release...

not here at pH 1.2

In the relatively acid medium of the fasting stomach, Medules are kept essentially intact by their special pH-sensitive coating (about 5% of Medrol content released in 2 hours at pH 1.2).

but here at pH 7.5

In the environment of the duodenum (at pH of approximately 7.5) 90% to 100% of the Medrol content is released within 4 hours.

...means gradual steroid absorption

Upjohn The Upjohn Company Kalamazoo, Michigan

135 tiny doses mean smoother** steroid therapy

(**So smooth and protracted that even among rheumatoid arthritis patients "morning stiffness in a great majority of these patients just doesn't exist any more. They wake up comfortable." Iuppa, N. V.: Curr. Therap. Res. 2:177 (June) 1960.)

Medrol hits the disease, but spares the patient

*Trademark, Reg. U. S. Pat. Off.— methylprednisolone, Upjohn

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Factual Clinical Data: Female, 25, torticollis due to trauma; slightest motion of head extremely painful. Fifteen minutes after administration of 10 cc. of ROBAXIN Injectable, muscle spasm was relieved and head could be moved without pain.

relax

painful skeletal muscle spasm

WITHIN MINUTES— with

Robaxin® INJECTABLE

Methocarbamol 'Robins' U.S. Pat. No. 2770649

A "safe, convenient medication"[9] for "immediate relaxation"[8] of acute skeletal muscle spasm. Has "a high potential"[9] for prompt relief, usually within minutes after administration.[9]

Maintain pain-free relaxation— WITHOUT DROWSINESS—with

Robaxin® TABLETS

Methocarbamol 'Robins' U.S. Pat. No. 2770649

For initial relief, or to maintain relaxation originally induced by ROBAXIN Injectable. Highly potent and long acting[2,6]—and virtually free from causing drowsiness, or other adverse side effects.[1,2,3,6] For one group of patients with low back disorders, ROBAXIN Tablets shortened hospital stay an average of 4.54 days per patient.[3]

NINE PUBLISHED STUDIES with 374 patients show ROBAXIN Injectable and ROBAXIN Tablets beneficial in 90% of cases.[1-9]

Literature available to physicians on request.

SUPPLY: ROBAXIN Tablets, 0.5 Gm. (white, scored) in bottles of 50 and 500. ROBAXIN Injectable, each ampul containing 1.0 Gm. of methocarbamol in 10 cc. of sterile solution.

REFERENCES: 1. Carpenter, E. B.: Southern M. J. 51:627, 1958. 2. Forsyth, H. F.: J.A.M.A. 167:163, 1958. 3. Grisolia, A., and Thomson, J. E. M.: Clin. Orthopaedics 13:299, 1959. 4. Lewis, W. B.: California Med. 90:26, 1959. 5. O'Doherty, D. S., and Shields, C. D.: J.A.M.A. 167:160, 1958. 6. Park, H. W.: J.A.M.A. 167:168, 1958. 7. Plumb, C. S.: Journal-Lancet 78:531, 1958. 8. Poppen, J. L., and Flanagan, M. E.: J.A.M.A. 171:298, 1959. 9. Schaubel, H. J.: Orthopedics 1:274, 1959.

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Whatever the measure of your patient's pain (and fear of pain), Phenaphen's four formulations provide a virtually complete "analgesic armamentarium" for dependable relief. Synergistic enhancement gives each dosage strength its own maximal effectiveness and tolerance—often sparing recourse to morphine. Adjustable dosage (1 or 2 capsules as needed) helps control fluctuating intensity.

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for maximum safe analgesia *(¼, ½, 1 gr.)*

In each capsule of
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Acetylsalicylic acid (2½ gr.)	162.0 mg.
Phenacetin (3 gr.)	194.0 mg.
Phenobarbital (¼ gr.)	16.2 mg.
Hyoscyamine sulfate	0.031 mg.

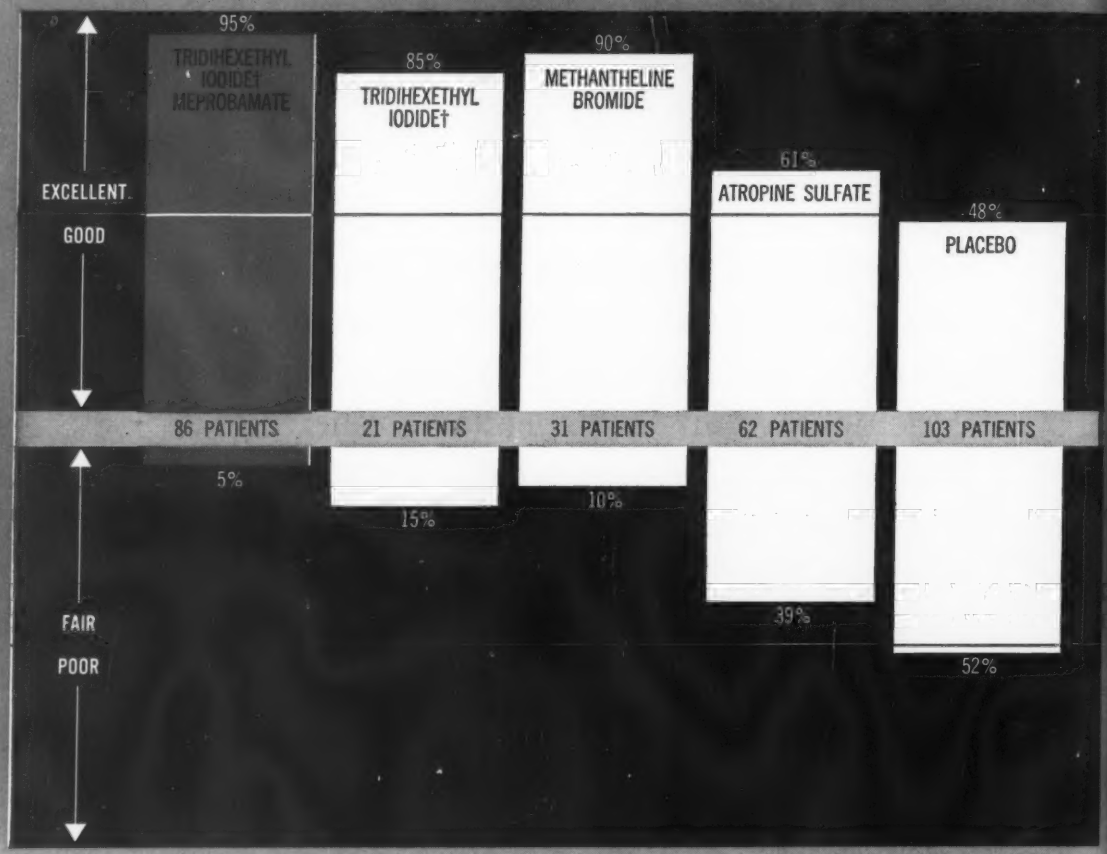
In each capsule of
PHENAPHEN NO. 2
Phenaphen with Codeine Phosphate ¼ gr.

In each capsule of
PHENAPHEN NO. 3
Phenaphen with Codeine Phosphate ½ gr.

In each capsule of
PHENAPHEN NO. 4
Phenaphen with Codeine Phosphate 1 gr.

clinically proven efficacy.

in relieving tension . . . curbing hypermotility and excessive secretion in G. I. disorders



PATHIBAMATE combines two highly effective and well-tolerated therapeutic agents:

Meprobamate—widely accepted tranquilizer

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PATHILON tridihexethyl chloride—anticholinergic noted for its effect on motility and gastrointestinal secretion with few unwanted side effects.

Contraindications: glaucoma, pyloric obstruction, and obstruction of the urinary bladder neck.

Two available dosage strengths permit adjusting therapy to the G.I. disorder and degree of associated tension.

Where a minimal meprobamate effect is preferred . . .
PATHIBAMATE-200 Tablets: 200 mg. of meprobamate; 25 mg. of PATHILON

Where a full meprobamate effect is preferred . . .
PATHIBAMATE-400 Tablets: 400 mg. of meprobamate; 25 mg. of PATHILON

Dosage: Average oral adult dose is 1 tablet t.i.d. at mealtime and 2 tablets at bedtime.

Pathibamate® 400 200

meprobamate with PATHILON® tridihexethyl chloride Lederle

clinically proven safety

The efficacy of **PATHIBAMATE** has been confirmed clinically in **duodenal ulcer, gastric ulcer, intestinal colic, spastic and irritable colon, ileitis, esophageal spasm, anxiety neurosis** with gastrointestinal symptoms, and **gastric hypermotility.**

Pictured are the results obtained with the **PATHILON** (tridihexethyl iodide)—meprobamate combination† in a double-blind study of 303 ulcer patients, extending over a period of 36 months.* They clearly demonstrate the efficacy of **PATHIBAMATE** in controlling the symptoms.

SIDE EFFECTS	TRIDIHEXETHYL IODIDE† MEPROBAMATE	TRIDIHEXETHYL IODIDE†	METHANTHELINE BROMIDE	ATROPINE SULFATE	PLACEBO
DRY MOUTH	1%	5%	72%	46%	5%
STOMATITIS	1%	0%	28%	14%	0%
VISUAL DISTURBANCES	0%	0%	50%	34%	1%
URINARY RETENTION	0%	0%	18%	11%	1%
DROWSINESS	0%	0%	0%	0%	0%
COMPLICATIONS OR SURGERY					
HEMORRHAGE	0%	9%	3%	9%	10%
PERFORATION	0%	0%	0%	6%	0%
OPERATION	0%	5%	5%	14%	2%
RECURRENCES					
NONE	28%	23%	25%	17%	26%
FEWER AND MILDER	67%	62%	52%	37%	24%
SAME OR MORE	5%	15%	23%	46%	50%

*Atwater, J. S., and Carson, J. M.: Therapeutic Principles in Management of Peptic Ulcer. Am. J. Digest. Dis. 4:1035 (Dec.) 1959.

†PATHILON is now supplied as tridihexethyl chloride instead of the iodide, an advantage permitting wider use, since the latter could distort the results of certain thyroid function tests.

Lederle LEDERLE LABORATORIES, A Division of AMERICAN CYANAMID COMPANY, Pearl River, New York

control the tension — treat the trauma

INCREASED LIFE EXPECTANCY FOR HYPERTENSIVES

"Life expectancy seems to be the one criterion that is most reliable and least questioned as a method of evaluating treatment for patients with elevated blood pressure."[1] "It is evident that effective therapy of hypertension will prolong the life of the patient by preventing the dreaded complications of this disease in the brain, the heart and the kidneys." "There is no doubt of the prolongation of life in group 3 and 4 (Keith-Wagener-Barker) by adequate antihypertensive treatment. Some authorities report a 50 per cent, five year survival ratio for treated patients with malignant hypertension as against a 1 per cent survival ratio for untreated patients."[2]

Evaluation based on life expectancy is extremely difficult because of the peril of maintaining an untreated control group.[1] The doctor, however, can evaluate the symptoms related to the elevated blood pressure. . . . We know that retinopathy may improve, the heart may be reduced in size, the electrocardiogram may improve and in favorable cases the blood urea nitrogen level may fall.[2] These are reasonably objective criteria on which to base one's evaluation of treatment.[1]

On the succeeding page is evidence that Unitensen included in any therapeutic regimen may improve the results in hypertension as measured by a regression of objective clinical changes in a substantial proportion of the patients treated.

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8. Raber, P. A.: Illinois M. J. *108*:171, 1955.
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10. Finnerty, F. A.: Am. J. Med. *17*:629, 1954.

Unlike diuretics or ganglionic blocking agents, Unitensen lowers blood pressure through widespread vasorelaxation. Normal vasomotor responses are not altered, and there is no venous pooling with resulting postural hypotension.[3-5] Through alleviation of cerebral vasospasm, Unitensen promotes cerebral blood flow and oxygen utilization.[6-9] Furthermore, Unitensen increases cardiac efficiency, improves renal function and tends to arrest the progress of vascular damage.[3, 4, 10]

Progress of Objective and Subjective Symptoms in Grades III and IV Hypertension Following Treatment with Unitensen and Unitensen-R

Observations in Patients* Treated up to 2 Years

Observations in Patients* Treated up to 3½ Years

The Course of Subjective Symptoms

Symptom	Number**	Improved	% Improved	Number**	Improved	% Improved
Headache	27	21	77.7	43	38	88.0
Palpitation	20	13	65.0	29	19	65.5
Angina	15	9	60.0	21	16	76.0
Dyspnea	17	8	47.0	27	14	51.0

Objective Changes Following Treatment

Finding	Number**	Improved	% Improved	Number**	Improved	% Improved
Funduscopic Changes	41	24	58.5	59	38	66.0
Enlarged Heart	20	13	65.0	35	23	65.7
Abnormal ECG	37	10	27.0	45	25	55.5
Proteinuria	31	12	38.7	43	27	62.7
Nitrogen Retention	17	6	35.2	28	10	35.7

Left hand charts from Clinical Exhibit "The Ambulatory Patient with Hypertension" presented AMA Convention, San Francisco, June 22-27, 1958, by B. M. Cohen, M.D.

Right hand charts include patients previously reported who had been continuously maintained on Unitensen and Unitensen-R, plus additional patients later added to the study. From Clinical Exhibit "The Office Diagnosis and Treatment of the Patient with Hypertension" presented American Academy of General Practice, Indianapolis, March 18-19, 1959, by B. M. Cohen, M.D.

*All patients in this study were initially classified as Smithwick Grades III and IV.

**Expressed as the number of patients exhibiting the symptom recorded.

UNITENSEN®

Each tablet contains: Cryptenamine (tannates) 2.0 mg.

UNITENSEN-PHEN®

Each tablet contains: Cryptenamine (tannates) 1.0 mg., Phenobarbital 15 mg.

UNITENSEN-R®

Each tablet contains: Cryptenamine (tannates) 1.0 mg., Reserpine 0.1 mg.

UNITENSEN® AQUEOUS

Each cc. contains: 2.0 mg. cryptenamine (acetates) in isotonic saline

new from Neisler
Analexin®
a new class of drug
for the relief of pain and muscle tension

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IN AGITATION AND TENSION

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brand of trifluoperazine

promptly calms and relaxes . . . reduces excitability and hyperactivity to normal levels. 'Stelazine' has little if any soporific effect. In fact, trial of 'Stelazine' in patients, when they are not at work, will show that in almost every case 'Stelazine' can be used without drowsiness on the job.

In one study[1] 'Stelazine' was given to crane operators, truck drivers, bulldozer operators and railroad engineers who were tense or agitated. They enjoyed relief of emotional distress—without a single case of drowsiness on the job.

N.B.: For information on dosage, cautions, contraindications and side effects, see available comprehensive literature or your *PDR*.

AVAILABLE: Tablets, 1 mg., in bottles of 50 and 500; and tablets, 2 mg., in bottles of 50.

1. Maerz, J.C.; Lee, H.G., and Hunter, H.H.: Treatment of Anxiety and Depressive Reactions: Special Requirements of Working Patients, report accompanying scientific exhibit at the Clinical Meeting of the American Medical Association, Dallas, Dec. 2-4, 1959.

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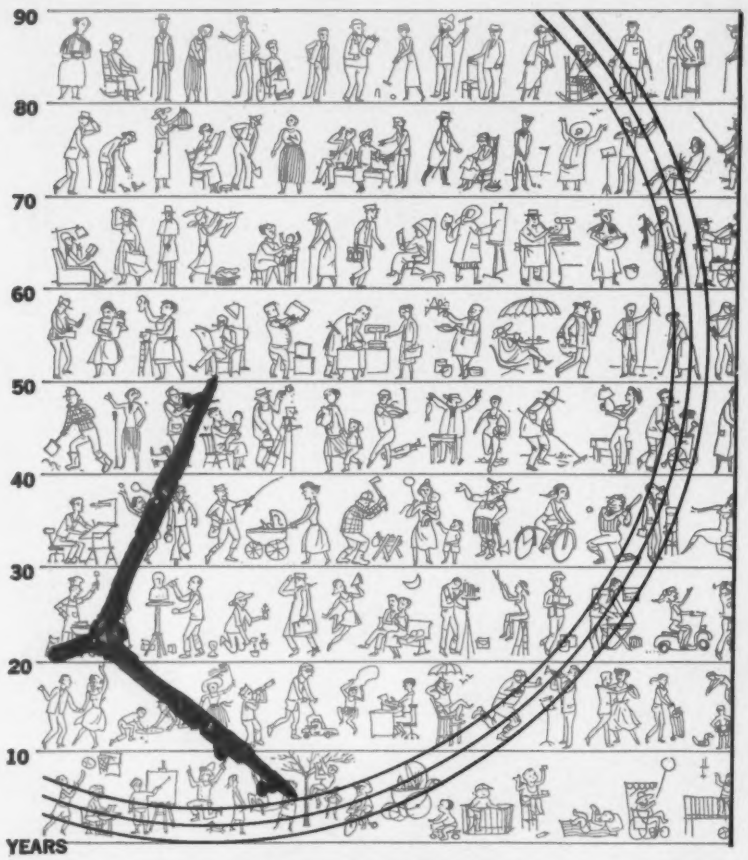

senile anxiety
disorientation
agitation
hostility
irritability
apprehension
hysteria
insomnia
chronic urticaria
alcoholism
menopausal syndrome
neuro-dermatoses
functional gastrointestinal disorders
psychoneuroses
tension headaches
dysmenorrhea
psychosomatic complaints
situational stress
asthma
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preoperative anxiety
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behavior problems

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ATARAX has a wide range of flexibility . . . from mild adult tensions and anxieties to full-blown alcoholic episodes . . . from the behavior disorders of childhood to the emotional problems of old age. Why? Because it gives you maximum adaptability of dosage . . . works quickly and predictably . . . is unsurpassed in safety.

ATARAX offers extra pharmacologic actions especially useful in certain troublesome conditions. It is antihistaminic and mildly antiarrhythmic, does not stimulate gastric secretions. Hence it is well suited to the needs of your allergic, cardiac and ulcer patients.

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Supplied: Tiny 10 mg., 25 mg., and 100 mg. tablets, bottles of 100. Syrup, pint bottles. Parenteral Solution: 25 mg./cc. in 10 cc. multiple-dose vials; 50 mg./cc. in 2 cc. ampules. Prescription only.

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VITERRA® for vitamin-mineral supplementation
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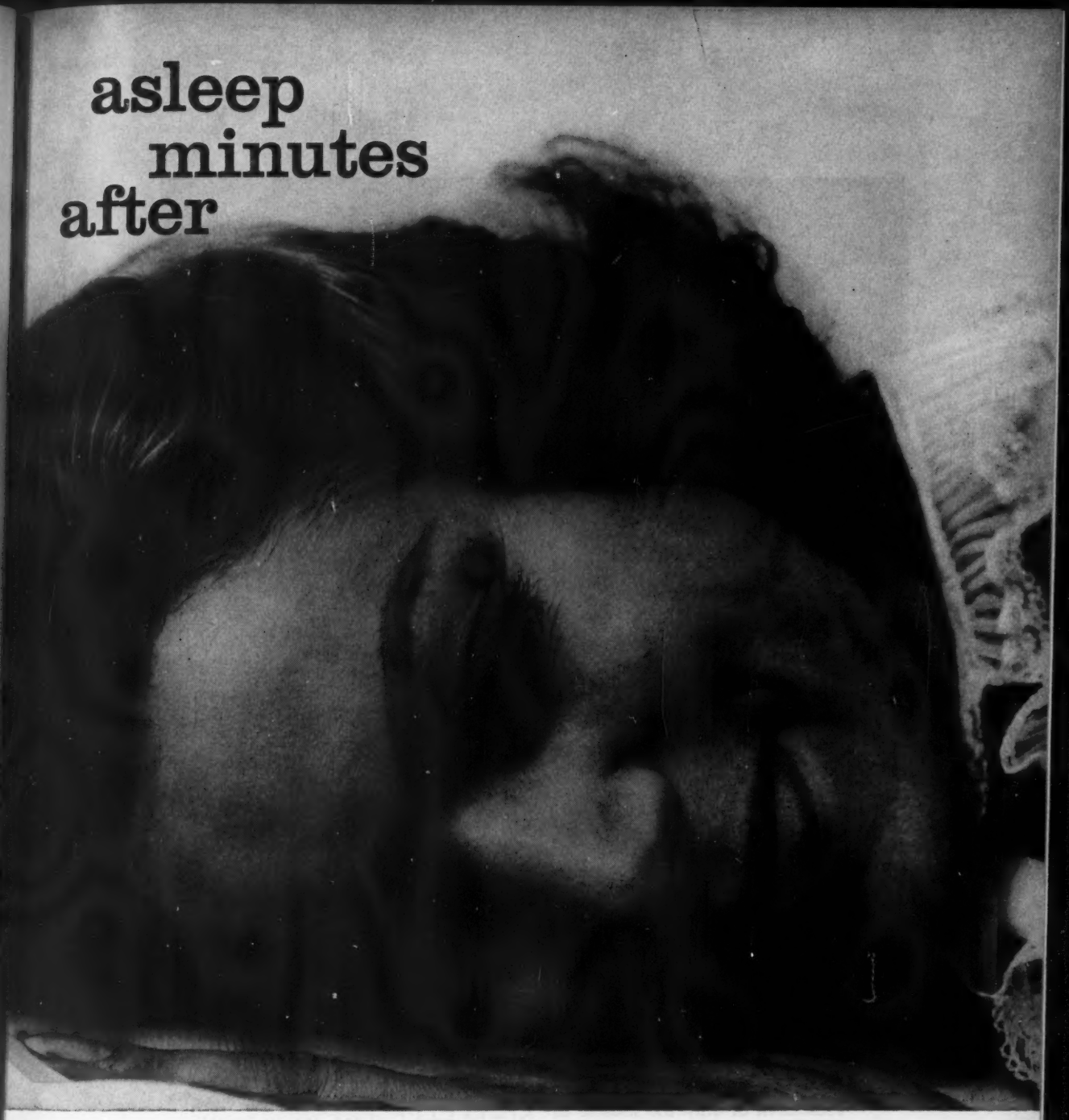

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"I slept like a log"

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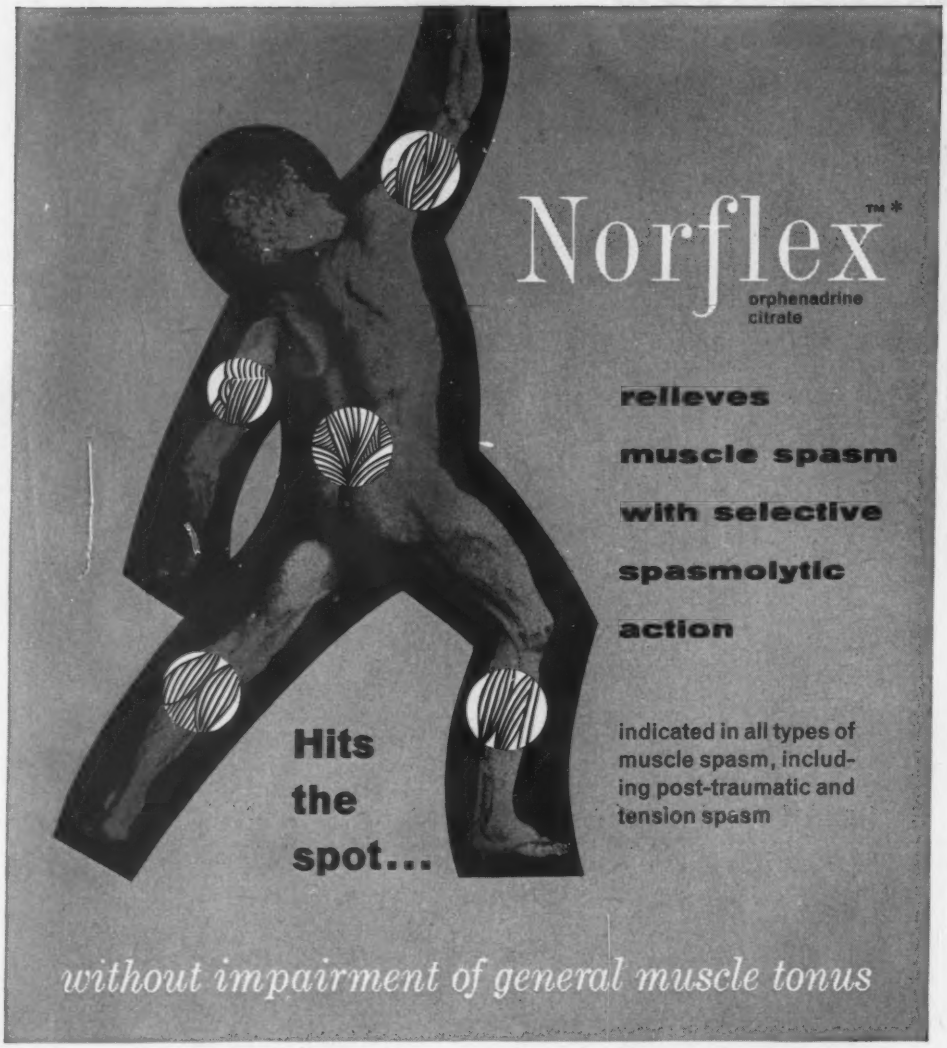
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Hits the spot...
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Restores mobility quickly and relieves associated pain by prompt relaxation of only the muscle in spasm. Prolonged action and potency provide all-day and all-night benefits...permitting uninterrupted sleep...facilitating rehabilitation.

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Tetracycline now combined with the new, more active antifungal antibiotic – Fungizone – for broad spectrum therapy / antimonilial prophylaxis

A new advance in broad spectrum antibiotic therapy, MYSTECLIN-F provides all the well-known benefits of tetracycline and also contains the new, clinically proved antifungal antibiotic, Fungizone. This Squibb-developed antibiotic, which is unusually free of side effects on oral administration when given in oral prophylactic doses, has substantially greater in vitro activity than nystatin against strains of Candida (Monilia) albicans.

Thus, in addition to providing highly effective broad spectrum therapy, MYSTECLIN-F prevents the monilial overgrowth in the gastrointestinal tract so commonly associated with such therapy. It helps to protect the patient from troublesome, even serious, monilial complications.

New Mysteclin-F provides this added antifungal protection at little increased cost to your patients over ordinary tetracycline preparations.

Available as: MYSTECLIN-F CAPSULES (250 mg./50 mg.) MYSTECLIN-F HALF STRENGTH CAPSULES (125 mg./25 mg.) MYSTECLIN-F FOR SYRUP (125 mg./25 mg. per 5 cc.) MYSTECLIN-F FOR AQUEOUS DROPS (100 mg./20 mg. per cc.)

For complete information, consult package insert or write to Professional Service Department, Squibb, 745 Fifth Avenue, N. Y. 22, N. Y.

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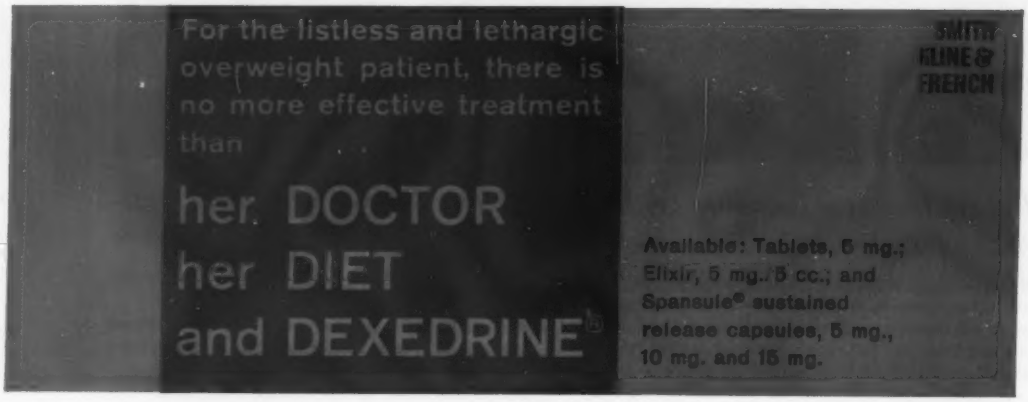
NEW

MYSTECLIN-F

Squibb Phosphate-Potentiated Tetracycline (SUMYCIN) *plus* Amphotericin B (FUNGIZONE)

"MYSTECLIN"®, "SUMYCIN"® AND "FUNGIZONE"® ARE SQUIBB TRADEMARKS

To lose weight, say nutrition authorities,[1-5] listless and lethargic patients require both increased energy output and decreased caloric intake. 'Dexedrine' provides a gentle stimulation that encourages normal physical activity. Furthermore, increased energy output is seldom reflected as increased food intake, because 'Dexedrine' also assures a positive, physiologic control of appetite.


For the listless and lethargic overweight patient, there is no more effective treatment than
her DOCTOR
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Available: Tablets, 5 mg.; Elixir, 5 mg./5 cc.; and Spansule® sustained release capsules, 5 mg., 10 mg. and 15 mg.

References:

1. Johnson, M.L., et al.: Am. J. Clin. Nutrition 4:37, 1956.
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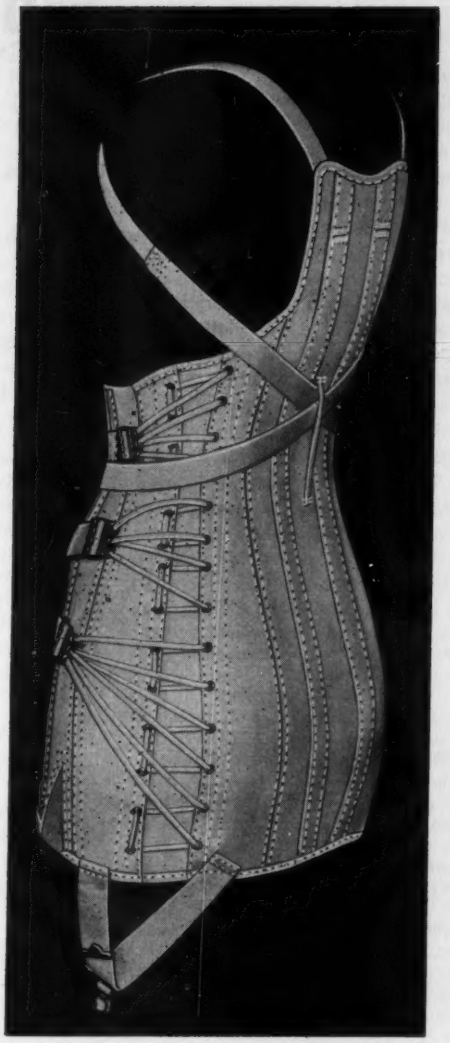
a dorso-lumbar support with single adjustment of shoulder straps in front to assure correct support

It's always been a problem for the patient to adjust satisfactorily the conventional dorso-lumbar support. In order to adjust shoulder straps at each side, the patient has to turn the shoulders out of normal position. This makes it difficult to attain the optimum support for the upper back.

Now Truform has the answer . . . shoulder straps that are tightened by a single adjustment in front, as shown in the drawing. No twisting and turning to each side. The patient's shoulders stay in their normal position, the adjustment firmly maintains the desired corrective position. The tightened straps, which cross in the back, are then held securely in a simply designed "keeper" (shown in drawing).

Greater height in the back, too, with two full-height steel stays to assure firm support. Comfortable adjustable underarm pads . . . 3 pull-straps to adjust and distribute tension.

Always look to Truform supports that are anatomically correct and therapeutically sound . . . fitted with skillful knowledge . . . available to you and your patients only from the Ethical Appliance Dealer.



NEW DORSO-LUMBAR SUPPORT

Women's models 1173-HS full skirt (pictured above) and 1174-HS regular length. Men's model 417-HS regular length. Drawing shows single adjustment of shoulder straps in front, retained in "keeper".

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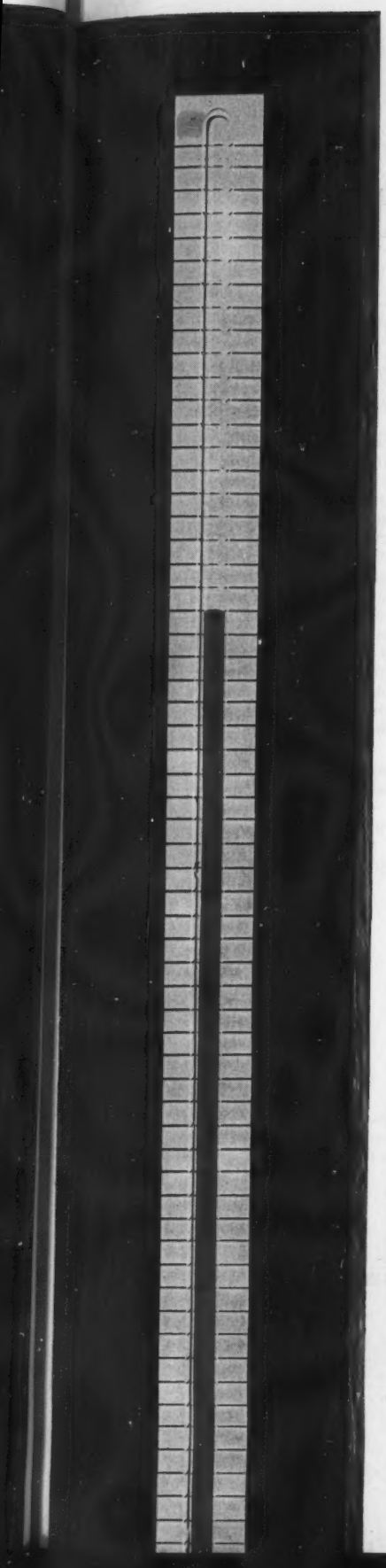
for a smooth downward curve



New Rautrax-N results in prompt lowering of blood pressure.[1] Rautrax-N, a new antihypertensive-diuretic preparation, provides improved therapeutic action[1] plus enhanced diuretic safety for all degrees of essential hypertension. A combination of Raudixin and Naturetin, Rautrax-N facilitates the management of hypertension when rauwolfia alone proves inadequate, or when prolonged treatment, with or without associated edema, is indicated.

Naturetin, the diuretic of choice, also possesses marked antihypertensive properties, thus complementing the known antihypertensive action of Raudixin. In this way a lower dose of each component in Rautrax-N controls hypertension effectively with few side effects and a greater margin of safety.[1-16]

Other advantages are a balanced electrolyte pattern[1-16] and the maintenance of a favorable urinary sodium-potassium excretion ratio.[2-16] Clinical studies[1-5] have shown that the diuretic component of Rautrax-N—Naturetin—has only a slight effect on serum potassium. The supplemental potassium chloride provides additional protection against potassium depletion that may occur during long term therapy.

Rautrax-N may be used independently or with other antihypertensive drugs, such as ganglionic blocking agents, veratrum or hydralazine, when needed for the occasionally difficult patient.

Supply: Rautrax-N—capsule-shaped tablets providing 50 mg. Raudixin (Squibb Rauwolfia Serpentina Whole Root) and 4 mg. Naturetin (Squibb Benzydroflumethiazide), with 400 mg. potassium chloride.

Dosage: For initial therapy, the suggested dosage is 1 to 4 Rautrax-N tablets daily after meals. If the higher amounts are needed, daily dosage should be divided into 2 doses given every 12 hours. However, dosage should be initiated at a low level, which may be increased after intervals of several days, if necessary, until the desired response is obtained. For maintenance therapy, 1 or 2 Rautrax-N tablets daily should prove adequate; however, daily maintenance dosage may range from 1-4 Rautrax-N tablets. Note: In hypertensive patients already on ganglionic blocking agents, veratrum or hydralazine, the addition of Rautrax-N will require an immediate dosage reduction of each of these agents by at least 50 per cent. The same dosage reduction applies when any of these agents is added to the Rautrax-N regimen. Literature available on request.

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The proved, effective antihypertensive—now combined with a safer, better diuretic

RAUTRAX-N*

Squibb Standardized Whole Root Rauwolfia Serpentina (Raudixin) and Benzydroflumethiazide (*Naturetin) with Potassium Chloride

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for vaginal discharges!

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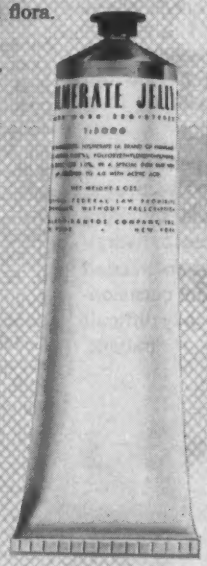
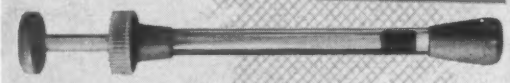
a proven effective agent in treating

TRICHOMONAS VAGINALIS VAGINITIS AND BACTERIAL VAGINITIS

Low surface tension allows for deep epithelial cell penetration. Kills most offending pathogens and re-establishes normal vaginal flora.

Prescribe: "Nylmerate Jelly with applicator"—5 oz. tube, also available in refill tube only. Simple to use . . . Applicator-full intravaginally morning and night preceded by a Nylmerate Solution water douche. Include treatment through menstrual period. Available only on your prescription.





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Phenylmercuric Acetate	0.02%
Boric Acid	1.0%

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Excellent adjunct in the management of monilia and trichomonas vaginal infections. Restores normal vaginal flora through a 3-prong attack. Low surface tension aids in reaching the innermost recesses where organisms flourish. Unlike vinegar, affords a controlled pH of 4.1 in dilution and is effective in any vaginal pH. Broad range activity against protozoa—bacteria—and fungi. Well suited for office use in swabbing vaginal vault. Available only on your prescription (eliminates excessive and unwarranted douching). Specify—Nylmerate Solution Concentrate pint bottle with measuring cap. Prescribe two tablespoonfuls or one capful to two quarts of water twice daily. As a prophylactic, use once a day through two menses.

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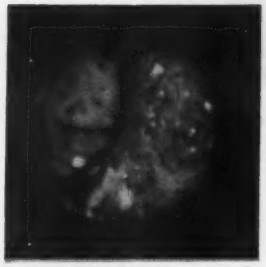
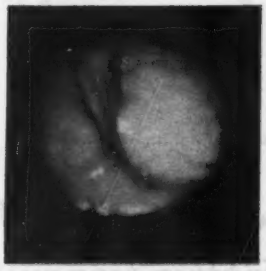
Excellent results in ulcerative colitis even where other steroids have failed

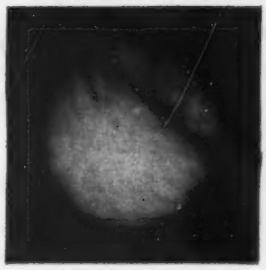
Proctoscopic view of the sigmoid in acute stage of ulcerative colitis



Proctoscopic view of the sigmoid following Depo-Medrol retention enemas for acute stage of ulcerative colitis



Proctoscopic view of sigmoid colon in a normal person



In controlling ulcerative colitis (recurrent, moderately severe, severe, and resistant), Depo-Medrol† can be given topically (by enema or rectal instillation) in requisitely large doses without producing significant side effects. Excellent results are obtainable even where other steroids have failed and improvement continues on oral Medrol maintenance dosage.

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the corticosteroid that hits the disease, but spares the patient

Medrol is supplied as 4 mg. tablets in bottles of 30, 100 and 500; as 2 mg. tablets in bottles of 30 and 100; and as 16 mg. tablets in bottles of 50. Depo-Medrol is supplied as 40 mg. per cc. injectable suspension in 1 cc. and 5 cc. vials. Mode of administration: Depo-Medrol (40-120 mg.) given as retention enema or by continuous drip three to seven times weekly.

*Trademark, Reg. U. S. Pat. Off. — methylprednisolone, Upjohn
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how does* Mellaril *differ from other potent tranquilizers?

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THIORIDAZINE HCl
specific, effective tranquilizer

provides highly effective tranquilization,
relieves anxiety, tension, nervousness.

but is virtually free of such toxic effects as

jaundice
Parkinsonism
blood dyscrasia
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greater specificity of tranquilizing action results in fewer side effects

Virtual freedom of Mellaril from major toxic effects is due to greater specificity of tranquilizing action—divorced from such "diffuse" effects as anti-emetic action.

"A new phenothiazine derivative, thioridazine [Mellaril®], was used to treat 71 patients, most of whom were unduly agitated and disturbed due to hospitalization for medical or surgical conditions....The response to treatment was considered satisfactory in 83.4 per cent of patients....In agreement with the published results of other investigators, we believe that thioridazine shows a greater specificity of tranquilizing action and freedom from serious toxic effects when compared with some of the other phenothiazines."*

Supply: MELLARIL Tablets, 10 mg., 25 mg., 50 mg., 100 mg.

*David, N. A.; Logan, N. D., and Porter, G. A.: Evaluation of Thioridazine (Mellaril), a New Phenothiazine, in The Hospitalized Patient, A. M. & C. T. 7:364 (June) 1960.

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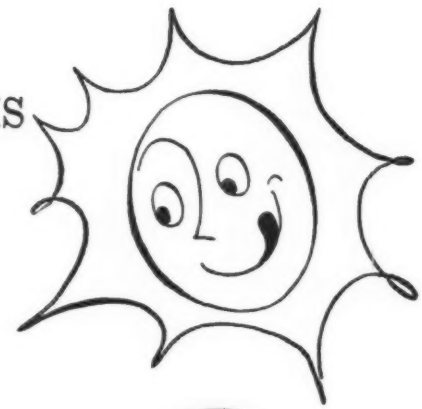
Do you stress the value of

roasts, chops and steaks as regular sources of *needed*

protein for summer diets?



Since many people cling to the false idea that meat appreciably increases body temperature, they serve meals under the banner of "special summer diets" lacking adequate nutrition.

Wouldn't it be a professional service to place emphasis on high protein meats such as roasts, chops and steaks for frequent serving in hot as well as cold weather?

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Milpath®

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MER/29 *reduces total body cholesterol in 8 out of 10 —and these are the patients most likely to benefit*

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MER/29 reduces both serum and tissue cholesterol, irrespective of diet.[1] In 463 patients, the mean cholesterol was reduced from 324 mg.% to 253 mg.% — an average decrease of 71 mg.%.[1-6]

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while more time is needed to determine the over-all prognostic significance, it has been observed that MER/29 "... reduced morbidity and mortality rates below those of control series during the first year following coronary thrombosis."[4]

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contraindication: Pregnancy. Since MER/29 inhibits cholesterol biosynthesis, and cholesterol plays an important role in the development of the fetus, the drug should not be administered during pregnancy.

supplied: Bottles of 30 pearl gray capsules.

...the first cholesterol-lowering agent to inhibit the formation of excess cholesterol within the body, reducing both tissue and serum cholesterol

...no demonstrable interference with other vital biochemical processes reported to date

...convenient dosage: one 250 mg. capsule daily before breakfast

...toleration and absence of toxicity established by 2 years of clinical investigation

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References: 1. Hollander, W., and Chobanian, A. V.: Boston M. Quart. *10*:37 (June) 1959. 2. Oaks, W., and Lisan, P.: Fed. Proc. *18*:428 (Mar.) 1959. 3. Oaks, W. W., *et al.*: A. M. A. Arch. Int. Med. *104*:527 (Oct.) 1959. 4. Lisan, P.: Proceedings, Conference on MER/29, Progr. Cardiovasc. Dis. *2*:(Suppl.)618 (May) 1960. 5. Oaks, W. W.: *Ibid.*, p. 612. 6. Hollander, W., *et al.*: *Ibid.*, p. 637. 7. Halperin, M. H.: *Ibid.*, p. 631. 8. Toro, J.: *Ibid.*, p. 544. 9. Morrison, L. M.: J.A.M.A. *173*:884 (June 25) 1960.

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when surgery or childbirth stops intestinal peristalsis

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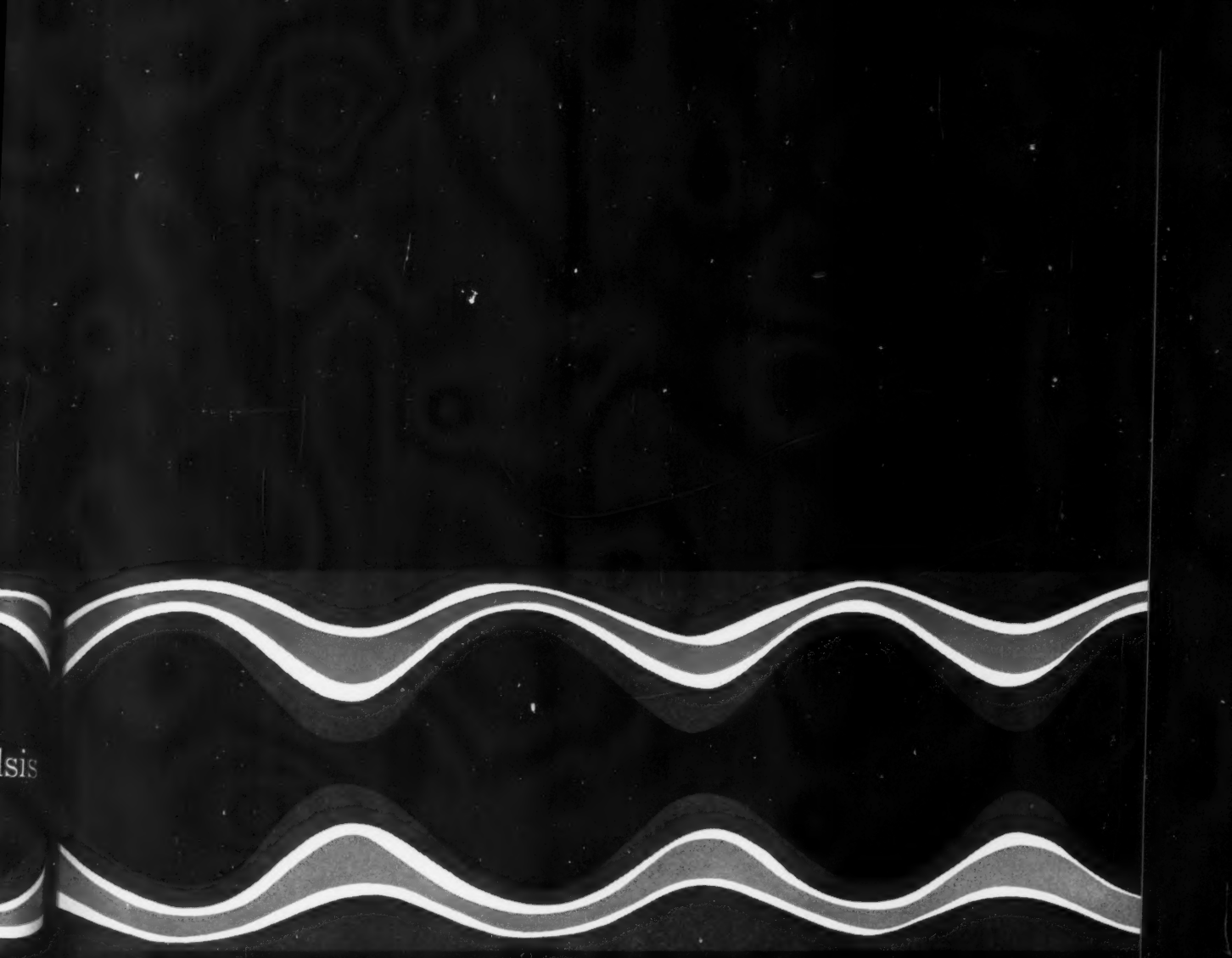

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Because it stimulates peristalsis, URECHOLINE helps restore normal gastrointestinal function. Given prophylactically soon after surgery or childbirth, or therapeutically when abdominal distention occurs, URECHOLINE facilitates expulsion of gas and promotes evacuation. *Supplied:* 5 mg. and 10 mg. tablets, bottles of 100. 1-cc. ampuls containing 5 mg.

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Optimum results are obtained by gradually increasing the dosage to the maximum the patient can tolerate without the appearance of drowsiness. The following procedure for dosage adjustment has proven highly successful:

Take one tablet 2 times per day for 2 days. On the third day increase the daily dosage by one tablet. Similarly increase the dose every third day thereafter, to the point of drowsiness.

For example, if one tablet 4 times a day produces an obvious sleepy feeling, and on three the patient is comfortable, then the proper dose will be three tablets per day.

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(NOT A TRANQUILIZER)

PLEXONAL®

Comparative clinical studies show that PLEXONAL is superior to meprobamate or barbiturates for daytime relaxation[1,2]

"Plexonal was preferred (superior therapeutic effect) by 73.7 per cent of the patients, whereas 11.1 per cent preferred meprobamate, a ratio of 6.6 to 1....30.5 per cent noted adverse reactions to meprobamate as compared to 7 per cent in respect to Plexonal.... Plexonal gave better results than did any of the sedative or relaxing agents that have been available during our experience covering the previous 15 years."[1]

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Dosage: One tablet 3 or 4 times a day is adequate for most patients. However, some require up to six tablets per day, whereas others respond adequately to as little as 1 tablet per day.

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1. Scheifley, C. H.: Proc. Staff Meet. Mayo Clin. 34:408 (Aug. 19) 1959.
2. Kadish, A. H.: Clin. Med. 2:379 (March) 1955.

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the first analgomylaxant ℞ *a single chemical that is both a general non-narcotic analgesic and an effective muscle relaxant*

Analexin is a new synthetic chemical[1,2] which produces (1) *analgesia* by raising the pain threshold and thus decreasing perception of pain and (2) muscle relaxation by selectively depressing polysynaptic transmission (interneuronal blockade), abolishing abnormal muscle tone without impairing normal neuromuscular function. The analgesic potency of one tablet is clinically equivalent to 1 grain of codeine; yet, Analexin is neither narcotic nor is it narcotic-related. Its muscle relaxant effect is comparable to the most potent oral skeletal muscle relaxants available.[3,4]

Analexin ***for relief of pain and skeletal muscle tension.*** Each tablet contains 200 mg. of phenyramidol HCl. Dosage—1 tablet every 2-4 hours or as needed.

Analexin-AF ***for relief of pain and skeletal muscle tension complicated by fever and/or inflammation.*** Each tablet contains 100 mg. of phenyramidol HCl and 300 mg. of aluminum aspirin. Dosage—2 tablets every 4 hours or as required.

in low back pain, arthritis and other musculoskeletal disorders... where pain makes tension and tension makes pain

analexin

stops both effectively

Phenyramidol HCl (Analexin) was evaluated by Batterman, et al.[5] in a series of 118 ambulatory patients with various painful musculoskeletal disorders. These patients were observed for periods as long as 22 weeks. The authors conclude: "Not only is satisfactory relief of painful states achieved in the majority of patients regardless of etiology and duration of pain, but there is also no evidence suggestive of cumulative toxicity. Furthermore, in contrast to codeine and meperidine, the likelihood of untoward reactions occurring in ambulant patients is not high. This is a decided advantage since the control of pain in the ambulant patient with chronic pain is a major clinical problem."

In other studies, Bealer[6] used Analexin in 26 cases of musculoskeletal pain and observed good or very good results in 11 patients; fair results in 14 and 1 case was unsatisfactory. Fifteen other patients were given Analexin-AF, and good or very good results were obtained in 13 out of 15 of these cases.[6,7]

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BIBLIOGRAPHY: 1. Gray, A. P., and Heitmeier, D. E.: J. Am. Chem. Soc. 81:4347, 1959. 2. Gray, A. P., *et al:* J. Am. Chem. Soc. 81:4351, 1959. 3. O'Dell, T. B.; Wilson, L. R.; Napoli, M. D.; White, H. D., and Mirsky, J. H.: J. Pharmacol. & Exper. Therap. 128:65, 1960. 4. O'Dell, T. B.; Wilson, L. R.; Napoli, M. D.; White, H. D., and Mirsky, J. H.: Fed. Proc. 18:1694, 1959. 5. Batterman, R. C.; Grossman, A. J., and Mouratoff, G. J.: Am. J. Med. Sc. 238:315, 1959. 6. Bealer, J. D.: Clinical Report 511:592, April 1, 1959. 7. Stern, E.: Clinical Report 511:599, May, 1959. (Clinical Reports in file of Medical Department, Irwin, Neisler & Co.)

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One dose of 2 tablets for day-long or night-long relief. Each long-acting tablet contains 25 mg. phenylephrine HCl and 4 mg. chlorprophenpyridamine maleate. Bottles of 50 and 250 green, film-coated tablets.

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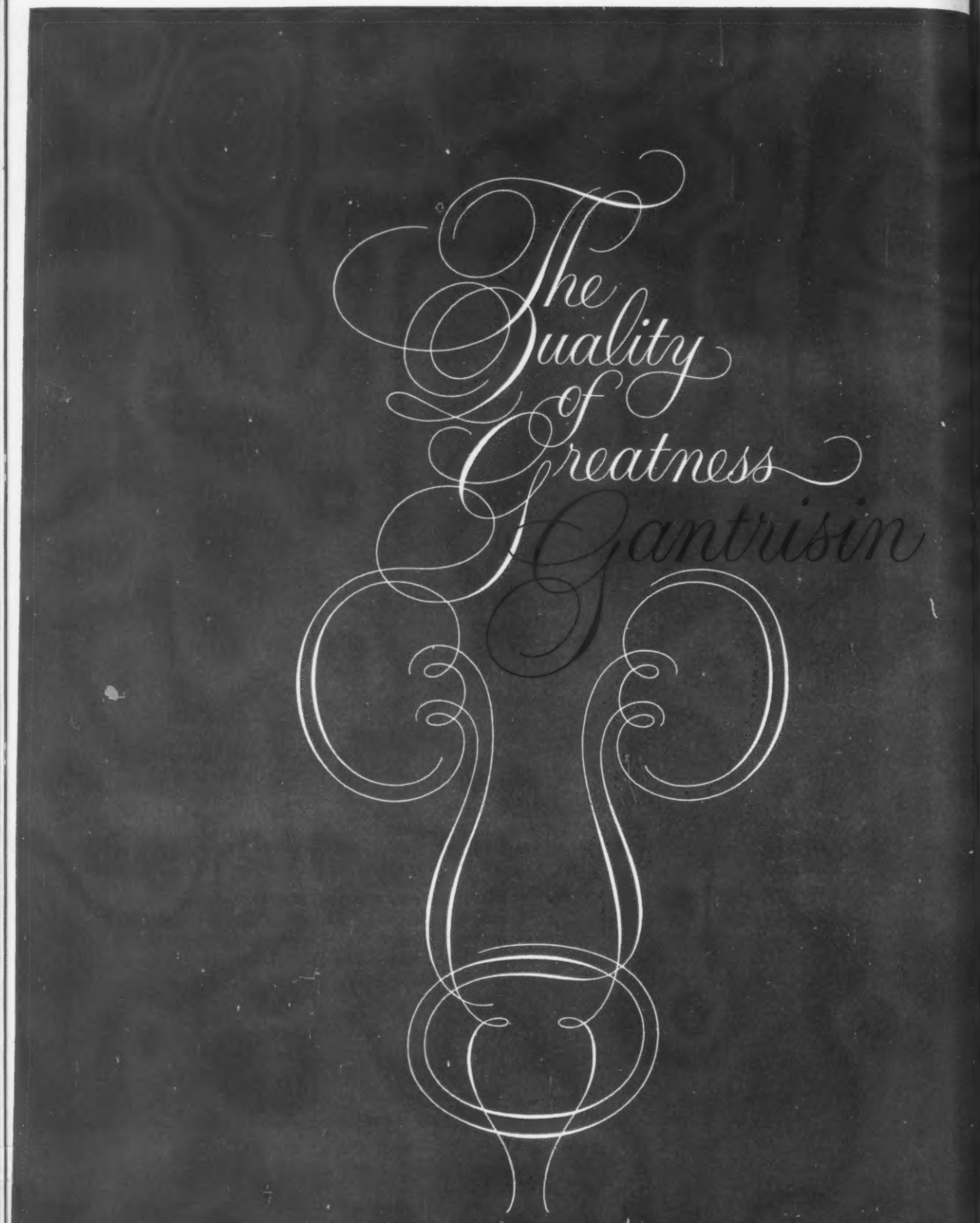
The Quality of Greatness
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COVERS THE PREDOMINANT PATHOGENS With its wide spectrum, Gantrisin covers all pathogens predominant in the urinary tract,[1,3-5] including many resistant strains. Its use in cystitis[2-5,6] often achieves better control than ". . . some of the more expensive antibiotics."[1]

NOTABLE SAFETY THROUGH HIGH SOLUBILITY The low toxicity and high solubility of Gantrisin[1-3,5] are especially important when dysuria in cystitis contraindicates fluid-forcing[1] or when prolonged therapy is required.[3]

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References: 1. O. S. Lowsley and T. J. Kirwin, Clinical Urology, ed. 3, Baltimore, The Williams & Wilkins Co., 1956, vol. 2, pp. 490 ff., 975. 2. J. J. Robbins, *J. Kentucky M.A.*, 56:47, 1958. 3. E. J. Richardson, in H. F. Conn, Ed., Current Therapy 1957, Philadelphia, W. B. Saunders Co., 1957, pp. 330 ff. 4. W. J. Reich and M. J. Nechtow, Practical Gynecology, ed. 2, Philadelphia, J. B. Lippincott Co., 1957, pp. 337-338. 5. J. T. Mason, in H. F. Conn, Ed., Current Therapy 1959, Philadelphia, W. B. Saunders Co., 1959, p. 342. 6. J. R. Hand, in H. F. Conn, Ed., Current Therapy 1959, Philadelphia, W. B. Saunders Co., 1959, p. 409. 7. E. M. Yow, *Am. Pract. & Digest Treat.*, 4:521, 1953. 8. W. E. Studdiford, Jr., *S. Clin. North America*, 34:293, 1954.

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constipation — nausea — dyspepsia
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hydrocholeretic – spasmolytic

With **Cholan** *therapy, the distressing symptoms of constipation, nausea, dyspepsia, flatulence and eructation disappear. Normal digestive function is quickly restored.*

Cholan DH®– dehydrocholic acid, Maltbie, 250 mg., a chemically pure oxidized bile acid. Dosage: 1 or 2 tablets t.i.d. after meals. Cholan V– dehydrocholic acid, Maltbie, 250 mg., and 5 mg. homatropine methylbromide. Dosage: 1 or 2 tablets t.i.d. after meals. Cholan HMB – dehydrocholic acid, Maltbie, 250 mg., 2.5 mg. homatropine methylbromide, and 8 mg. phenobarbital. Dosage: 1 or 2 tablets t.i.d. after meals.

Supplied: **Bottles of 100, 500 and 1,000 tablets.**

For a trial supply write to Professional Service Department

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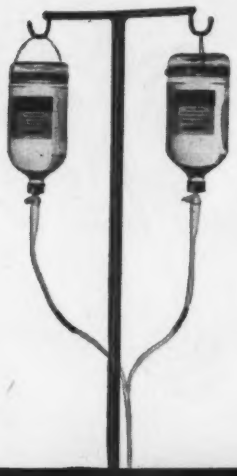
closed system minimizes risk of infection



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Available in 1 liter flasks with administration sets and catheter. Peridial with 1½% dextrose Peridial with 7% dextrose

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*Stinebaugh, B. J.: A.M.A. Arch. Int. Med. 105:613, 1960.

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Presidential acceptance address*

ROY J. HARVEY, D.O., Midland, Michigan

This is a time of great pride for me. It is a rare distinction to be chosen by one's colleagues for the responsibility of leadership. To be your president imposes upon me an obligation to my profession second only to that obligation we all share as physians—the health care of our patients.

This is proper. The first duty of a doctor is to his patient. But without his profession—its schools—its hospitals—its research—its ambitions—any physician would be inadequate for his tasks.

In talking to you about our profession tonight, I am aware that an inaugural speech should attempt two goals. It should be auspicious to its occasion. And it should offer a broad outline of the year's work ahead.

So I choose as my theme tonight a remark by the late Reverend Peter Marshall, chaplain of the United States Senate, "You had better stand for something, or you'll fall for anything."

What I stand for is osteopathy and the osteopathic profession. I am proud to be an osteopathic physician. I am proud to use my talents to apply the principles of health which are fundamental to human life.

I believe in the past achievements of osteopathy, its present strivings, and its future ambitions. I believe that it has a future—a future bright with promise and vital to the advancement of the healing arts.

As our late editor, Ray Keesecker, stated so well for us, osteopathic medicine lies within the broad continuum of medicine. Just as Martin Luther sought to reform his church in keeping with the God-given insights of his mind, so did Andrew Taylor Still seek to reform the medicine of 1874 with the highest powers of his science.

Still declared the premise of osteopathy. In keeping with his pioneer heritage, he foresaw a revolutionary concept of health. He set his own lifework to the achievement of answers to the very questions he posed about the nature of mankind. Even today, we cannot answer most of those questions. But the quest of all medical research has come from an understanding of why man is as he is.

Those of us who were in Chicago last summer heard what I think is a well-put statement—the purpose of medicine. Our own Otterbein Dressler[1] gave it to us. He asked:

> What are the objectives of medicine? To cause man to live forever? Most certainly not. The objectives of medicine cannot and must not be just "cutting and sewing," opening and closing bellies, prescribing pills and unctions, or manipulating spines. Our objective must be to try to cause man to live his natural life span, whatever that may prove to be, in health, in comfort, in happiness—at peace with himself, at peace with his neighbors, and at peace with his God. To these principles am I as a physician dedicated.

This is something for which I, too, stand.

All of us are part of the struggles which followed Doctor Still's bold statements. Our elders went to legislatures again and again to gain our right to serve. They worked diligently to create professional colleges, to teach and refresh our profession—and they created hospitals to serve man and his health needs. Only through their efforts have we gained the status and respect we enjoy today.

As I speak to you here tonight, the osteopathic profession stands on the edge of full maturity—a maturity of opportunity which demands a maturity of purpose. It is easy for us, singly or together, to say what we are against. It may be more difficult for us to say exactly what we are for.

Yet, saying what we are for is vital to our profession—just as vital as it is to our nation, our economy, and our whole way of life. Perhaps the state of the osteopathic profession is only a reflection of the uncertainties of our whole way of life. But the problems of osteopathy are uniquely ours. About them, I might echo the question put to us by George Northup,[2] "Are *you* part of the problem or part of the solution?"

*Presented at the Thursday Evening Banquet, Sixty-Fourth Annual Convention of the American Osteopathic Association, Kansas City, July 21, 1960.

I think we are moving to undertake solutions for some of our problems.

Our acceptance and licensure is not complete. It may never be. But no state which has granted full responsibility to our profession has ever revoked it. More than nine of every ten of us practice in accordance with the full scope of our training.

You have been told of your profession's recognition by groups which have backed their approval with money vital to our advancement. The Los Angeles County Osteopathic Hospital is a tribute to osteopathy in California. General Motors was a large contributor to the new Flint, Michigan, osteopathic hospital. In Fort Worth, Texas, the Carter family were patrons of a fine osteopathic hospital there. Only last month the Rockefeller family announced donation of a million dollars for osteopathic education.

This year, the Osteopathic Progress Fund topped a million dollars—with *your* increased giving and support, and more than three hundred thousand dollars from patients and friends. Sale of osteopathic Christmas seals contributed to the loans made by the A.O.A. to more than a hundred students.

Last month, *your* scholarship committee distributed funds received from ten pharmaceutical firms, Republic Steel, and the McCaughan Memorial Fund. The auxiliary increased its scholarships this year.

We expect more public recognition. Our Division of Public and Professional Service has been working with writers for *Life* magazine and other publications. A book about osteopathy which will have wide appeal will soon be published. We will complete a new film in the fall. All this will be added to the growing coverage of our activities by newspapers, radio, and television.

Though the medical profession has maintained organized resistance to osteopathy, the American Medical Association created a liaison committee which met in May with our conference committee. They have asked that we have other such meetings. This request I feel we should honor, in keeping with our commitment to talk with any group concerned with public health.

In the midst of this progress, we must observe that there are grave and serious differences within our own group. I suspect that such differences and divisions are inescapable in any organization as dynamic and progressive as our association. Whatever the crisis may be, we must resolve that it will be met by our best minds and our own devoted efforts. In the past, our profession has been tempered by the fires of controversy. I sincerely believe it will survive them now. For this we stand.

As I become your president, you have a right to know for what I stand. I shall concern myself with the unity and the purpose of our profession. We have not reached all our vital decisions, nor have we defined all our needed efforts. As long as our association continues to live and grow, we must strive toward positive decisions.

Our decision last summer to preserve our professional identity was a needed basis for our future. This must be part of the goal for which we stand.

Many persons, including some of us here, were confused as to what we were seeking in the overall scheme of health care. Perhaps some still are confused. But this much is now clear. We choose to be masters of our own destiny. We choose to pursue it free of anyone's protective custody or benevolence. In the ways that count, we have helped to shape today's medicine through our independence. We must continue to shape it by independent thought and by independent action.

As physicians, we are a vital and needed part of our nation's health resources. We are included in responsible estimates by our government of what will be needed for the future health care of Americans.

You know that osteopathic physicians are a part of the Surgeon General's report on physicians for a growing America. To assure America of enough doctors, there must be more osteopathic physicians. Your Association has accepted this challenge of providing more of these needed doctors. As president, I hope to stimulate an increasing amount of our effort to the development of our profession to meet the needs of coming years.

During the past year, we have taken steps to perfect the machinery for our development program. The A.O.A. Council on Development has defined its purposes and created committee and staff assignments to meet them. The National Osteopathic Foundation has been reorganized. Lay friends of our profession have accepted appointment to its board. One has been elected its chairman. Others will be invited to join in coming months.

Under the heading of development, we must work to eliminate weaknesses in several specific areas—all vital to our future.

Our most direct concern for our profession is the attraction of more talented young people to our ranks. We are aware that the scientific-minded youngster of today has many career opportunities which demand less of him than osteopathy. Our task is to make it known that this profession is a calling which has ample rewards for meeting our high standards. We can succeed in this only if each of us accepts a direct responsibility for student recruitment.

A second part of this same problem is to provide facilities, instruction, and subsidies for the young people who may seek to join our ranks. The cost of a professional education has risen tremendously since I was graduated in 1938—both for the student and for his school. Even with tuition at an all-time high, students pay less than one third the cost of operating our colleges. Without help, many promising students simply cannot obtain the ten to twenty thousand dollars needed to finance a medical education. Without our firm support, our colleges cannot go on providing their traditional high quality of instruction. They cannot expand their facilities to train more students or broaden their curricula to encompass the unfolding wonders of the healing arts.

No less than other professions, can we afford to neglect our own contributions to the development of medical science. Our devoted scientists must be given assistance, facilities, and time to pursue their

projects. Perhaps more than any other area, this research is vital to our acceptance by other learned groups.

The Surgeon General reminded us of what we have known—there must be more osteopathic colleges—at least two more in the next 15 years. We are not without hope for these colleges. But such hopes cannot be realized without the efforts of the entire profession. We will stress these efforts during the year.

Of increasing importance is the availability of sufficient hospitals for every D.O. to give complete patient care. Our 400 hospitals now have more than 15,000 beds. In many areas, our patients have the right to elect our services in tax-supported institutions. But even if we were admitted to every public hospital, our osteopathic institutions still would have the responsibility of providing postgraduate education for our profession. *We cannot delegate that obligation.*

We cannot delegate *any* of the problems of our profession. We must—and we do—stand for the development of our own profession.

It may seem to all of us that doctors have quite enough to do. Even so, there is a matter of good citizenship for which we, as a profession, are obligated. We have contended these many years that we deserve a voice in health planning. We have argued that we deserve to be given public health responsibilities and sought for counsel in policy decisions. These requests are being answered. An osteopathic educator helped write the Surgeon General's report we mentioned. Some fifteen doctors of osteopathy attended the White House Conference on Children and Youth this spring. In some states, we are represented on state boards of health or on composite licensing boards. Many of us serve as coroners, county health officers, school and team physicians, and as advisors to nonprofessional health groups.

Osteopathic physicians are responsible for the success of polio clinics in many communities where other physicians declined to participate. A fine local example is the eye clinic for indigents operated here by osteopathic physicians. More of us must involve ourselves in these responsibilities.

We and our institutions must equip ourselves for participation in disasters and emergency health services. The National Civil Defense Act charges our profession and our association with this responsibility. Even the American Medical Association, in its report on emergency medical services, recognizes that the osteopathic profession is an integral part of such preparedness planning. To meet our responsibility here will require every physician and every hospital to assume community leadership.

As you know, the A.O.A. for several years has been active in the National Health Council. Such projects as the Paducah Health Information Survey and our demonstrated willingness to support council activities have helped us to earn the respect of the sixty-four other participating agencies. We must continue in the National Health Council.

Likewise, we must concern ourselves with other groups which have become involved in providing health services.

I think we should make it clear to all these groups —the unions, insurance companies, corporations, government agencies, and cooperative plans—that we are more concerned about providing proper health care for all than with the manner in which it is paid for.

We must recognize that these groups are sincerely concerned with the problems of providing health care. We must understand that our failure as physicians to participate in planning with these groups can only result in the creation of inferior health care programs—unsatisfactory to doctor and patient alike —and fostering in them the inherent destruction of our whole way of practice.

The demonstrated hostility of some physicians toward health planning in which they would share responsibility and authority with others has created a polar situation with no middle ground for constructive discussion. If lay groups can get no cooperation from physicians in their planning, they will quit asking for it. They will plan without us. Eventually we may have to accept something not of our making and not to our liking.

We have said we are willing to cooperate. Let us prove it by cooperating.

We must apply ourselves to telling the osteopathic story. Though our reputation may be increasing, many Americans yet fail to know of our contributions in health care. Powerful voices still are raised in opposition to our progress. They must be answered by the clear voice of our profession. Our central office staff can only help us plan. Individually, we must tell our story.

To this—the development of our profession—I dedicate my presidency. To this for which we stand, I ask you to give your best effort.

Yet, these are but means toward a more important end—better health care for all Americans. Last month, the new president of the A.M.A., Dr. E. Vincent Askey,[3] paused in his inaugural talk to ask a question. It is a question which concerns you and me. I would like to repeat this question, with his answer:

> Are we forgetting that a physician must be more than a skillful person who applies science to the treatment of disease?
>
> I hope we are not, for medical care is not complete without the warmth, understanding, and human concern of the doctor. We deal with individuals who fear, hope, sorrow, and worry. We must retain our ability to allay fear, to inspire hope, to ease sorrow, to strengthen the patient's determination to get well.

This, as a physician, I most earnestly stand for.

As I said in the beginning, I stand for osteopathy and the osteopathic profession. I believe in its past, its present, and its future. Above all alse, I believe in its destiny to serve future Americans.

201 Ellsworth Ave.

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Clinical electromyography in the differential diagnosis of the painful extremity*

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Physicians in the various specialties as well as those in general practice are manifesting an increasing interest in the clinical use of electromyography. Naturally, their most frequent question is, "For which of my patients will electromyography contribute to better diagnosis and management?" This paper is an attempt to answer this important question by presenting histories representative of more commonly encountered cases and by discussing the relatively simple basis on which the clinical value of the electromyogram, commonly referred to as the EMG. First, let us briefly define clinical electromyography, then describe electromyographic technic, and finally discuss the type of information produced by its use.

Definition and technic

In general, the term "clinical" is used to describe the information derived from a direct examination of a patient by means of sight, hearing, touch, and smell. The electromyograph may be thought of as a specialized type of neurologic examination which serves to amplify the physician's clinical senses of sight and hearing.[1] Clinical electromyography may then be defined as the visual and acoustic demonstration of electrical activity in the voluntary muscles of a patient for purposes of diagnosis or prognosis of neuromuscular disease. It is of value because we lack special sense organs to otherwise detect the different characteristic electrical changes associated with muscle contraction in health and disease.

Electromyographic technic is based upon the insertion of a sewing-needle type of insulated electrode into muscle tissue so that its tiny uninsulated tip records the electrical activity of muscle fibers. The voltages produced are then amplified, resulting in a spike-shaped wave upon an oscillographic screen and a characteristic sound on a loud speaker, both of which have definite recognizable characteristics depending upon the presence and nature of neural or muscular disease. Since such a small, discrete area is being sampled, many areas within the same muscle must be checked.

Uses of electromyography

The information most commonly sought is whether denervation fibrillation is present, as its presence indicates an interruption anywhere from the anterior horn cell out to the muscle fibers it supplies. This fibrillation cannot be detected clinically (unless it is in the tongue) so that its presence must be detected electrically. When the nerve impulse from the anterior horn cell's lower motor neuron to its muscle fibers has been interrupted for approximately 2 to 3 weeks (18 to 21 days), no matter whether the interruption is close to or far from the muscle, the individual muscle fibers are thought to become hypersensitive to circulating acetylcholine[2] and begin to contract spontaneously. The resulting electrical activity can be recorded on the electromyograph. We thus have a method for detecting the electrical changes in muscle that follow wallerian degeneration. Fibrillation will continue until the muscle is either reinnervated or the fibrillating muscle is replaced by fibrous tissue or otherwise irreversibly destroyed.

In the partial nerve injury, the amount of denervation can be estimated by noting the ease with which denervation potentials (seen as characteristic waves on the oscillographic screen) are detected in the muscle. The relative frequency of denervation potentials is then determined by comparison with the frequency with which normal muscular electrical activity occurs. A muscle completely paralyzed as a

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result of lower motor neuron disease shows no normal electrical discharge, that is, no normal voluntary units. As nerve regenerations occurs, the reinnervated individual muscle fibers that make up the group supplied by a given anterior horn cell contract slightly out of phase with each other and produce small polyphasic electrical waves. The appearance of these waves, especially when coupled with a decrease in fibrillation and an increase in normal voluntary electrical discharge, gives evidence of regeneration before any clinical evidence can be detected. This may occur as much as 8 weeks or more before voluntary motion is grossly apparent.[3] The value of the earliest possible information on regeneration is clearly evident from the point of view of prognosis and decisions for or against surgical exploration.

In peripheral nerve compression such as Bell's palsy the pressure may be sufficient to block nerve conduction physiologically, without producing organic discontinuity of the axone. As a result, the involved muscle lacks voluntary contraction, but fibrillations are absent (since there is no wallerian degeneration), indicating a prognosis for good functional recovery. As the recovery phase is entered, a partial nerve block prevents transmission of the full discharge rate.[2] Normally, when a muscle is voluntarily contracted, there appears on the screen an increasing number of electrical discharges (motor unit potentials) at an increasing frequency until an interference pattern results with full effort. It is this interference pattern that is reduced in the discharge pattern referred to above. A reduced interference pattern may also occur in such nerve pressure lesions as spinal lesions, cervical rib and costoclavicular syndrome, carpal tunnel syndrome, and ulnar nerve compression.[4]

In most kinds of peripheral neuropathies of mild to moderate degree a nerve conduction block of a certain percentage of the involved motor fibers occurs, without anatomic (wallerian) degeneration. This block is due to myelin loss or edematous overstretching of the nerve while the axis cylinder remains intact. If fibrillation does occur in such a partial lesion, because of a mixture of wallerian degeneration in some nerve fibers with conduction blocks in other involved nerve fibers, this fibrillation can be expected to be less than after more severe pathologic change. This is important in assessing the true severity of the lesion and its prognosis since the pictures of the severe and moderate neuropathy can be clinically indisguishable.

At times, when the clinician knows from physical examination that motor denervation exists, he may feel that exact knowledge of the distribution of the denervation would be of diagnostic value. In such a case, electromyographic examination of an extremity and the corresponding paraspinal musculature will reveal whether the muscles involved, either clinically or only on electrical evidence, fit a pattern appropriate to a single peripheral nerve or to a nerve plexus. The pattern of denervation may point to nerve root involvement, or to systemic disease such as polyneuritis or amyotrophic lateral sclerosis. The best clinician will at times find it difficult or impossible to differentiate disuse atrophy from motor denervation, especially when pain, disuse, or contracture syndromes secondary to the strains and restrictions of weakened structure complicate the picture. The electromyograph will quickly and reliably aid him in doing this. For example, in the chronic phase of poliomyelitis it may be of value to indicate which muscles are worth a trial of intensive physical therapy. This saves the patient a prolonged period of useless physical therapy and helps to select those cases suitable for early orthopedic surgery or bracing.

A painful extremity may arise from a variety of local or remote causes. It may be complicated by hysteria, disuse atrophy, or malingering. The electromyographer can supply very useful information to the clinician to aid in the evaluation of this pain as well as of muscle weakness, paralysis, or atrophy

In problems of pain in the upper extremity, particularly when the patient is in the age group for degenerative arthritis or has had some injury to the cervical spine, it is difficult to determine whether the pain originates in a "trigger" area, is referred from an arthritic joint or its periarticular structures, or is actually caused by compression of a cervical nerve or some part of the brachial plexus. The electromyogram will be decisively diagnostic only if the motor portion of the nerve is involved. Further, it will indicate only that, for example, a specific nerve root is damaged; but it cannot determine whether the cause is a herniated intervertebral disk or compression of the nerve in an intervertebral foramen narrowed by arthritis.

The following cases were examined by the author and will be used to illustrate the usefulness of clinical electromyography in the differential diagnosis of the painful extremity.

Pain in the upper extremity

Case 1 • A 50-year-old osteopathic physician referred herself for electromyographic examination because of pain, numbness, and tingling throughout both hands and all fingers, with radiation of discomfort into both forearms. Severity had gradually increased so that she was dropping syringes during venipuncture and dropping instruments during surgery. There was a history of a whiplash type of strain to the neck 20 months earlier with gradual onset of the present complaints 6 months later. Roentgenograms showed a loss of the normal cervical lordosis, narrowing of the sixth to seventh cervical interspace, and degenerative arthritic changes of the lower cervical spine.

Physical therapy directed to the neck had failed to relieve the symptoms. The patient consulted a university neurologist who suggested laminectomy. She then consulted a neurosurgeon, widely known as an authority in his field, who advised that surgical decompression of the cervical nerve roots might indeed be necessary to relieve the symptoms, but that electromyography should first be performed.

Electromyographic sampling of selected muscles supplied by the anterior and posterior primary divisions of the fourth cervical through the first thoracic spinal nerve roots was done bilaterally. Diagnostic abnormalities were absent except for mild (infrequent) but definite denervation activity in both thenar eminences, as supplied by the median nerve below the wrist. These findings were reported as consistent with a neuropathy of the median nerve below the wrist, such as is seen in carpal tunnel syndrome. Trial of local steroid injected into one carpal tunnel gave complete relief of symptoms. Two months later, the second wrist was injected and complete relief ensued. The patient remains symptom-free 6 months later.

Discussion • Carpal tunnel syndromes[5,6] are commonly mistaken for cervical arthritis with nerve root irritation, thoracic outlet syndromes such as scalenus anticus syndromes, vascular disease such as Raynaud's disease, or for predominantly psychoneurotic or psychosomatic disorders. The patient frequently complains of numbness, tingling, and discomfort in the hands, often without good objective clinical neurologic evidence. Careful history commonly elicits a history of vocational or recreational activity which may be responsible for a tenosynovitis of the long flexors of the fingers within the carpal tunnel or acute or chronic trauma to the median nerve. The carpal tunnel syndrome presents a variety of confusing atypical clinical pictures. Localized atrophy and weakness without pain in the hand may be mistaken for amyothropic lateral sclerosis, the residual of an unrecognized poliomyelitis, or the distal form of muscular dystrophy. It may be unrecognized when it occurs in conjunction with rheumatoid arthritis. Fatigue, discomfort, and pain in the shoulder and neck may occur as the patient attempts to compensate for her hand difficulty. Occasionally, when there is reason for a suspicion of coronary artery disease, the carpal tunnel syndrome and its associated proximal symptoms may be mistaken for a shoulder-hand syndrome.

Following trauma, it may be difficult at times to differentiate between cervical nerve-root pressure and a brachial plexus injury.

Case 2 • Approximately 10 days before consulting a physician, a 41-year-old Negro man slipped, struck his left supraorbital area on the edge of a sink, and noted some local swelling. Two or three mornings later, he awakened with a stiff neck and paresthesias radiating from the posterolateral neck to the supraclavicular, shoulder, and interscapular areas. Home use of heat, massage, and salicylates gave some slight relief.

Electromyography answers the following questions: Is there denervation present in a muscle? How much? At what level? Is the denervation that of a single nerve, a plexus, a spinal nerve root, or is it generalized? Is there electrical evidence of regeneration, even though clinical evidence is not yet apparent?

During physical examination overt anxiety and hyperventilation were noted. Neck motion was limited and painful on right lateral flexion and markedly painful on hyperextension. Other motions were guarded but only slightly uncomfortable and limited. Vertical compression of the neck was very painful, with relief on traction. Tender areas over the second and third cervical laminae on the left and the third and fourth cervical laminae on the right were noted. Neurologic examination was negative.

X-ray examination showed that neck extension was restricted. A large osteophyte was present anteriorly between the fourth and fifth cervical vertebral bodies. There was a heavy calcific spur formation between the sixth and seventh cervical vertebrae. Findings suggested traumatic and arthritic changes.

The patient was seen in the departments of neurology, orthopedics, and physical medicine and rehabilitation, and was diagnosed and treated on the basis of an apparent cervical syndrome. Treatment consisted of application every other day of hot packs, ultrasound, manual cervical traction, and supervised active and passive neck motion, as well as administration of meprobamate and salicylates, and use of a Schantz collar. The patient reported good relief lasting 4 hours after a treatment. He continued to complain about pain, at times radiating from the neck into his scapulae and either shoulder as well as occasional exacerbations of the entire original complaint. After 2 months of treatment, definite improvement was reported. One month after this, the patient complained of pain which radiated from the neck laterally into the right shoulder and posterior arm, of tingling in all ten fingers, and of a weak grip. The marked nervousness and suggestibility of the patient, together with the bilaterality of the findings, made sensory evaluation difficult. Our impression was that of a whiplash type of cervical strain and degenerative arthritis with probable radiculitis, in a hyperventilating, anxious patient. An electromyogram taken at this time, 3 months after the original injury, showed mild to moderate bilateral partial denervation of the brachial plexus in the lateral, posterior, and medial cords, mainly the posterior cord.

An immediate recheck of the patient showed a bilateral, markedly positive Adson test with total radial pulse obliteration, as well as an absent radial pulse on shoulder hyperabduction. The patient stated that pain awakened him at night, and that at such times his shoulders were often in hyperabduction. The right scalenus was markedly tender. A scalenus block with 4 cc. of 1 per cent Xylocaine gave complete and rapid relief of pain from the shoulder through the elbow as well as relief of the tingling. Our diagnosis was therefore changed to that of thoracic outlet syndrome with scalenus anticus and hyperabduction factors producing a brachial plexitis.

Repeated blocks, specific exercises, attention to postural factors, and sleeping with both wrists strapped to the bedside to prevent hyperabduction was followed by a remission of symptoms in his extremities.

Discussion • In this case, electromyographic absence of denervation in the cervical paraspinal muscles demonstrated that the injury was below the level of the cervical nerve roots. It is interesting, parenthetically, to hypothesize on the several possible mechanisms of this man's brachial plexus compression.[7] "Spasm" of the scalenus anticus muscle was probably secondary to the musculoligamentous strain of his original injury, although irritation of its cervical nerve supply may have been contributory. Further, since the scalenus is an accessory muscle of respiration, hyperventilation may have led to its overuse. Loss of muscular tone following enforced inactivity led to a sagging of the shoulder, facilitating irritation of the brachial plexus over a first rib elevated by scalenus "spasm." In hyperabduction, in addition to the usual consideration of "kinking" of the neurovascular bundle under the coracoid process and the tendon of the pectoralis minor, a second site of compression is in the retroclavicular space between the clavicle and the first rib, as this space can be diminished by hyperabduction.[8]

Localization of nerve injury by apparently obvious clinical evidence can be misleading. For example, one would expect that a fracture of the shaft of the humerus followed by wrist drop would indicate damage to the radial nerve in its humeral groove. Electromyographic examination will rule in or out the possibility that the same trauma damaged the brachial plexus higher up, thereby causing the wrist drop. It would be better to determine this before surgical exploration at the humeral level.

Similar complications in differential diagnosis may arise following a tetanus antitoxin injection, since the clinical picture of serum neuritis may be a localized, a diffuse, or a plexal syndrome, and it is difficult at times to differentiate clinically from the later effects of injury.

I have observed shoulder pain resistant to various treatments for what was variously diagnosed as bursitis, brachial neuralgia, chronic postural strain, and cervical syndrome. Electromyographic demonstration of injury to the long thoracic nerve of Bell led to the discovery of serratus anterior muscle weakness as the cause of the shoulder pain. Because of its straight course from its lower cervical nerve root origin and its fixation by scalenus and serratus muscles, this nerve is subject to pathologic stretch, that is, following heavy lifting or neck injury.[9,10] Treanor[11] has pointed out the importance of looking for scapular winging or other evidence of scapular paresis in the presence of unexplained shoulder pain.

Pain in the lower extremity

Case 3 • A 48-year-old machinist was referred with a chief complaint of moderate low-back pain for the preceding 5 days with a radiation of more severe pain into the back of his left thigh, lateral leg, and foot. Cough, sneeze, and strain reproduced the radiation. Pain was partially relieved by trunk lean away from the side of involvement. A similar lesser episode in 1957 had responded to manipulation. Recurrence in 1958, one year ago, had not been relieved by manipulation, but it did respond rapidly to pelvic traction, postural instruction, and pelvic flexion exercises.

On physical examination it was noted that normal lumbar lordosis was lost. The patient stood with the involved hip and knee in mild flexion. Sciatic nerve stretch tests were all positive. The Achilles reflex was diminished, and the left calf was 1 inch smaller in diameter than the right. Hypesthesia was present on the lateral aspect of the foot and throughout the sole.

Heat, bed rest, pelvic flexion exercises, ultrasound, and pelvic intermittent traction failed to relieve the patient's complaints. Electromyographic examination was then performed and showed denervation fibrillation in the lateral calf and hamstring muscles and the paraspinal muscles supplied by the fifth lumbar and first sacral nerves. Partial laminectomy was performed by an orthopedic surgeon at the fourth and fifth lumbar and first sacral interspaces, and revealed a sequestrated fifth lumbar disk tightly jammed against the first sacral nerve root. Collaring indentation of the nerve root was noted after the sequestration was removed. The patient made an excellent recovery and was back to full-time employment as a machinist 5 weeks after operation.

Discussion • Marinacci[12] has reported on a series of 507 cases which clinically simulated herniated lumbar disk or lumbosacral nerve root compression but were electromyographically determined to be polyneuritis, neuronitis, lesions of the sciatic, femoral, peroneal, tibial, or plantar peripheral nerves, disuse atrophy, anterior horn cell diseases, myotonia, muscular dystrophy, and lumbosacral plexus lesions. Eighty-six of these patients had had laminectomies for their complaints. Not surprisingly, this indicates how muscular weakness in the lower extremities can throw extra strain on the low back and mislead the examining physician as to the source of the difficulty. Patients are not infrequently referred to the electromyographic clinic with what clinically appears to be fifth lumbar nerve root compression but who unexpectedly show denervation only in a peripheral nerve, the peroneal. Further questioning will bring

out a history consistent with acute or chronic compression of this nerve with subsequent secondary or coincident back strain. In the case just presented, a partial tibial nerve lesion at the level of the popliteal fossa with secondarily altered low-back mechanics could have been responsible for the clinical findings, especially since much of this man's recreational activity involved prolonged sitting, such as uninterrupted periods of all-day driving. Electromyographic examination ruled out this possibility.

Case 4 • A 59-year-old white woman bookkeeper was referred for a chief complaint of severe sciatic-like stabbing pain radiating from the left lower sacral area into the buttock and posterolateral calf, with tingling in the latter area. The pain was usually related to certain positions or movements. Specific weakness or numbness was denied. Two months earlier, her stopped car had been very slightly dented when it was struck in the rear by another auto, and she "felt as though an icepick was jabbed into her back" (low lumbar area). Almost 2 months of hospitalized bedrest, including local heat, muscle relaxants, and pelvic traction, were stated to have afforded only partial and temporary relief. An orthopedic consultant had recommended conservative care. An electromyogram, taken in the third week after the accident, was negative. A strong psychogenic overlay in a neurotically compulsive woman with a litigation problem was suspected by physicians attending this case. Three years and 10 years earlier she had had similar milder episodes lasting a few days, which cleared rapidly following low-back manipulation.

At physical examination it was noted that she was very anxious, and that she walked with great effort and hesitation, with small shuffling steps, never placing one foot in advance of the other and leaning heavily on her crutch and cane. Weight bearing on the left lower extremity was minimal. There was more than a 20 degree trunk list to the right, with the opposite hip and knee slightly flexed. The left iliac crest was 1 inch lower than the right. Lumbar hypertension was nil and exquisitely painful. Lateral trunk bend to the left was nil and reproduced the chief complaint.

Electromyography may call attention to factors not hitherto noted so that on further history and physical examination the correct diagnosis emerges. It may so confirm the clinician's impression that he may apply proper therapy before delay and hesitancy eventuate in irreversible changes

Neurologic examination showed the knee jerks to be both trace and the ankle jerks to be both absent, despite reinforcement. Biceps and triceps jerks were equal and active. No deficit of pin prick or touch in the lower extremity could be elicited. Manual muscle testing was suggestive only of left big toe extensor weakness. Differences in calf and thigh circumferences were within normal limits.

Marked temporary relief of pain followed Xylocaine block of the "trigger" areas, and the patient walked without her crutch for the first time in 2 months. This was followed by a period of residual but lesser relief. These blocks plus physical therapy were continued twice a week for 1 month, and further improvement was reported by the patient. Despite this, the trunk tilt was little changed. Factors of psychogenic overlay made the results of therapy difficult to evaluate, and suspicion of a marked functional component was strongly entertained.

Three months following the accident, electromyographic examination was repeated. It showed moderate denervation in the areas of left extensor hallucis longus and extensor digitorum longus, and slight denervation in the anterior tibial and gastrocnemius muscles. Evidence of denervation was also noted in the posterior division muscle at the fifth lumbar level. This was interpreted as compatible with a left fifth lumbar nerve root compression. The patient was then referred to an orthopedic surgeon for evaluation for lumbar laminectomy.

Discussion • The presence of normal innervation as shown by electromyography before the end of the third week following her accident, coupled with the presence of denervation in fifth lumbar nerve root distribution demonstrated later by the same method, will make for nearly indisputable evidence as to the etiology and reality of this patient's complaints when she has her day in court. No less important is the removal of psychic or litigious factors as having any primary bearing on the origin of her complaints. This patient is representative of the diagnostic difficulty we have all encountered with the neurotic or suggestible patient who also had an underlying organic neurologic lesion.

An electromyographic examination is accepted by the courts, insurance companies, veterans administration adjudication boards, and similar institutions as objective evidence.[13,13a] Further protection of patient and physician will be afforded by a preoperative electromyogram when indicated to demonstrate objectively the existence and extent of motor damage. This is to avoid situations where the patient might attribute his disability to the operation, or perhaps to spinal anesthesia[14] or a myelogram. In many patients presumed to be suffering from the consequences of spinal anesthesia, neurologic complications have been demonstrated by electromyogram to be actually due to other, sometimes unsuspected, causes. These varied causes include pressure neuropathy which was present before operation or occurred during convalescence, and plexitis due to tetanus antitoxin injection.

Case 5 • A 66-year-old white man was seen for a complaint of deep, aching pain in the right low back, radiating down the right buttock, posterior thigh, lateral leg, and ankle, into all the toes and the sole of the foot. Occasionally lesser aching was noted in the anterior thigh to the knee. This had had a sudden onset 17 months previously while the patient was arising from a stooped position. There had been partial relief following chiropractic manipulation, but symptoms recurred 3 months later and progressed despite further manipulation. Some relief was noted with heat, salicylates, and a good night's rest, with recurrence of pain after 2 to 3 hours on his feet. When pain was severe, it could be substantially relieved by walking. Coughing, sneezing, and straining produced no pain. A weight loss of 20 pounds over the past 6 months was attributed by the patient to the anorexia of severe chronic pain.

It was noted on physical examination that the patient bore weight on the uninvolved extremity, with a slight hip-knee flexion of the opposite side. There was loss of the normal lumbar lordosis. Mild atrophy of the right gluteal, thigh, and calf areas was present. Lumbar motion was free and without pain in all quadrants. Sciatic and femoral nerve stretch tests were positive. Palpatory tenderness was marked over the right gluteus medius and the right transverse processes of the third, fourth, and fifth lumbar vertebrae. There was general tenderness to compression over the right thigh, calf, and foot. Knee and ankle jerks on the normal side were plus 3 and plus 2, respectively. On the involved side, they were plus 1 and zero to trace. Hyperalgesia to pin prick was present over the right anterior thigh, lateral leg, and the dorsum of the right foot. Touch was intact.

Laboratory tests gave the following results: Erythrocyte sedimentation rate was 24 mm. in 1 hour. Complete blood count, urinalysis, fasting blood sugar, serology, blood urea nitrogen, acid and alkaline phosphatase, phosphate, and cerebrospinal fluid studies were all within normal limits. Roentgenograms showed the right femoral head to be ¼ inch higher than the left. At the second lumbar level there was a narrow disk space with spurs on the adjacent vertebral margin. The electromyogram was negative. A myelogram showed a defect at the fourth and fifth interspace, probably dural compression.

A total fifth lumbar laminectomy was performed, with a report of "hypertrophied ligamentum flavum which was completely adhered to the dural sac at the level from the fourth lumbar to the first sacral area." Dural decompression of the fourth and fifth lumbar nerve roots with lysis of extradural adhesions was performed.

When next seen, 6 weeks after operation, the patient stated that he had had a brief period of mild relief postoperatively but that his chief complaint has since recurred and was becoming worse. Electromyographic study was repeated and was again negative. Because this test again failed to detect any denervation despite the extensive complaints and muscle wasting, suspicion was aroused, leading to further physical examination. This disclosed that at this time the distal half of the right femur was symmetrically enlarged and slightly irregular and gave the feeling of being 1½ times the diameter of the left femur. The radiologist reported "thinning expansion and periosteal reaction of the cortex of the shaft of distal two-thirds of the right femur. There is a 5 by 2 cm. irregular calcification in the middle of the involved segment of the femur. These findings suggest the possibility of chondrosarcoma or osteogenic sarcoma."

Biopsy followed by amputation confirmed the diagnosis of chondrosarcoma on the distal right femur. The patient's original complaint was completely relieved by the proximal thigh amputation. When last seen, 7 months later, the patient was active on crutches, had had no recurrence of his pain, had a good appetite, and was gaining weight. We prescribed a prosthesis for him.

Discussion • In 1952, Young[15] of the Mayo Clinic reported on a group of patients with nonneurologic lesions simulating protruding intervertebral disks. This article is well worth reviewing for its case histories of osteoid osteoma of the femur (4 cases), glomus tumor of the popliteal fossa, twisted ovarian cyst, multiple myeloma, sarcoma, and tuberculosis, which point up the lesson that a lesion responsible for low-back and leg pain is not always a disk or even situated in spinal structures.[16] Where the clinical findings seem definitely to indicate lumbar or sacral nerve root compression and the electromyogram is negative, a very careful review of the case is indicated. For, while a given patient may combine the nerve root irritation of a herniated disk with a negative electromyogram, simulating syndromes must be ruled out.

In view of the prolonged duration of the symptoms and the definite muscle weakness and atrophy localized to certain muscle groups suspicion should have been aroused in the case just described by the negative electromyogram.

In a comparison with myelography in 375 consecutive cases for localization of spinal nerve root compression, the myelogram was 78.5 per cent correct and 21.5 per cent incorrect. The electromyogram was 92 per cent correct and 8 per cent incorrect. These findings were all confirmed at time of sur-

In medicolegal cases electromyography diminishes the frequency with which a label of "hysteria," or "gold deficiency compensationitis," or "litigation neurosis" may be falsely applied, assuring that justice as well as adequate medical care is afforded the patient

gery.[17] The figures in regard to the accuracy of myelography were very closely in accord with Armstrong's[18] experience and citation of the literature as reporting an error of greater than 1 in 5 patients operated on for disk lesions after myelography.

This problem arises for several reasons. A laterally protruded intervertebral disk may stretch or compress a lumbar root without indenting the dura. Nerve root pressure and deformity within the intervertebral foramen may not be adequately visualized by contrast media within the dural envelope.[19] Another cause arises when the subarachnoid space terminates above the lumbosacral disk. In this rather infrequent anomaly, contrast media obviously cannot diagnose a herniated nucleus pulposus at that level.[20] Further, posterior herniations have been reported in 15 per cent of one series of routine autopsies.[20] McRae[21] reports from the Montreal Neurological Institute that posterior disk protrusions, small or large, single or multiple, can be shown at postmortem examination and by myelography to be present without the patient having complained of symptoms, past or present. These posterior disk protrusions, at least one cervical and one lumbar, McRae suggests are present in nearly everyone over age 40.

The electromyogram is a laboratory test, with certain of the limitations of other laboratory tests. For example, while it may localize which spinal nerve root is involved, it does not determine anatomically where the involvement is located. If a lumbar disk protrudes medially, instead of affecting the nerve root at its own level as it does by tracking laterally, it may compress the nerve root of the next lower level. If myelographic contrast dye studies demonstrate a very definite level of cord or root disorder, this anatomic level is usually more reliable for purposes of surgical localization than is the root localization determined by the electromyograph. There are exceptions to this statement. Where the myelogram fails to demonstrate or localize the lesion, electromyographic spinal root localization may be very helpful. No suggestion is made here that one diagnostic method should supplant another, but rather that diagnostic accuracy will be greatly increased when these tests are used in conjunction, as indicated.[22-25]

Tables I and II aid the physician in deciding where electromyography is or is not indicated. There is some duplication in these tables for purposes of instructional emphasis.

TABLE I—SITUATIONS IN WHICH ELECTROMYOGRAPHY IS OF DIAGNOSTIC OR PROGNOSTIC VALUE

1. Lower motor neuron lesions
   a. peripheral nerve
   b. nerve root (disk, cord tumor, et cetera)
   c. anterior horn cell (polio, spinal cord tumor, or trauma)[22]
   d. neuronitis and Guillain-Barre syndrome
   e. plexus (serum neuritis, tumor, trauma)
   f. loss of anal sphincter control (postoperative, et cetera)
2. Earliest determination of nerve regeneration, stationary status, or further degeneration (Bell's palsy, peripheral nerve injury)
3. Differentiation of atrophy of disuse from neurogenic atrophy
4. Differentiation of organic from functional paralysis (not uncommonly coexistent in one patient)
5. Myopathy (muscular dystrophy, polymyositis, myotonia, thyroid myopathy)
6. Myasthenia gravis
7. Determination of whether existing denervation is old or relatively recent (problem of recent trauma superimposed on old disease or injury)
8. Evaluation of "paralyzed" muscle for retraining potential (partially denervated muscle which has become "alienated" from voluntary control)
9. Persistent muscle twitching (amyotrophic lateral sclerosis)
10. Medicolegal problems (trauma, surgery, spinal anesthesia, antitoxin neuritis, et cetera)
11. As a preliminary test before myelography, and to supplement the myelogram.

TABLE II—SITUATIONS IN WHICH ELECTROMYOGRAPHY IS NOT DIAGNOSTIC

1. Upper motor neuron lesion (hemiplegia, brain tumor, cerebral palsy)
2. Basal ganglia disease (Parkinson's disease)
3. Lower motor neuron disease of less than approximately 2 to 3 weeks in duration (see summary)
4. Multiple sclerosis and other demyelinating diseases (unless, uncommonly, some wallerian degeneration has occurred)
5. Purely sensory irritation or loss.

Summary

A painful extremity may arise from a variety of local or remote causes. It may be complicated by hysteria, disuse atrophy, or malingering. The electromyographer can supply very useful information to the clinician to aid in the evaluation of this pain as well as of muscle weakness, paralysis, or atrophy by answering the following questions: Is there denervation present in a muscle? How much denervation is present? At what level has denervation occurred? Is the distribution of the denervation that of a single nerve, a plexus, a spinal nerve root, or is it generalized? Is there electrical evidence of regeneration, even though clinical evidence is not yet apparent?

The value of the electromyogram varies. It may be decisive by safely and simply enabling a diagnosis difficult to make otherwise. It may call attention to factors not hitherto noted so that on further history and physical examination the correct diagnosis emerges. It may be so confirmatory of the clinician's impression that he may swiftly and with certainty apply the proper therapy before delay and hesitancy eventuate in irreversible changes. In medicolegal cases it diminishes the frequency with which a label of "hysteria," or "gold deficiency compensationitis," or "litigation neurosis" may be falsely applied, assur-

ing that justice as well as adequate medical care is afforded the patient. It is not infrequent that when findings are normal the electromyogram contributes only the finding that there is no electrical evidence of a diseased state in the lower motor neuron complex. This in itself is a valuable contribution to differential diagnosis. It should be noted that it is only the motor circuit that is checked by the electromyogram.

In medicolegal problems, it is important to perform electromyography within the first 3 weeks, or even better, the first 2 weeks after trauma, surgery, anesthesia, or other suspected cause of denervation, if one is to have evidence that will best stand up in court, evidence that will medically prove whether or not a given lesion had its onset prior to the incident which the patient alleges to be the cause. This is because it takes 18 to 21 days for denervation activity to appear.

Clinical electromyography provides information that supplements and often is more valuable than clinical examination for diagnosing or excluding disease of the motor unit, which includes the anterior horn cell, nerve root, and motor cranial or spinal peripheral nerve, myoneural junction, and the muscle fibers supplied. It does not supply clinically useful information about the sensory system or upper motor neuron lesions. By properly timed sequential examination it will indicate whether a given incident, such as trauma, has been responsible for a nerve injury. It is a useful tool whose findings can enable the physician to make his diagnosis final and decisive.

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A review of regional enteritis*

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For valid and occasionally invalid reasons, examination of the small intestine is usually bypassed or overlooked in an attempt to arrive at a more common or better accepted diagnosis. Burrill B. Crohn[1] reminisced that during his student days in the early 1900's the teachers openly stated that since so little was known of the disease processes involving the small intestine little time would be spent studying them. Since those days, as in every other field, more information has been gained regarding this area, and in the present-day practice of medicine more astute thinking includes the lesser bowel in differential diagnosis of abdominal complaints.

Small intestinal motility patterns have been established for many organic and functional changes occurring in the small intestine.

Cherigie,[2] in his research on inflammatory conditions of the small intestine, stated that the affections can be divided into two groups: those of organic and those of functional origin. He felt that the organic lesions predominate and manifested their changes by hypertrophy of the lymphatic nodes, nodules, and Peyer's patches. These changes were said to originate in the ileocecal area. The functional disturbances, on the other hand, were also common; but they appeared to be transient, varied in their position, and disappeared on treatment. They only exceptionally reach an advanced stage, so that they are usually reversible. Thurnher[3] felt that even though morphologic changes of the mucosal pattern were seen, and even though these were known to be signs of disease, it was impossible to differentiate certain pathologic entities on the basis of x-ray findings. Nevertheless, certain alterations of the small intestine have been recognized frequently enough that characteristic diagnostic features have been established.

Since the small intestine has been stated to range from 15 to 23 feet in length, a large portion of the gastrointestinal tract can be affected. Morris' anatomy[4] divides the small intestine into two portions: the duodenum and the mesenteric small intestine, of which the jejunum and ileum comprise the latter. The blood supply, arising from the superior mesenteric artery and the superior pancreaticoduodenal branch of the hepatic artery, arches through the mesentery to supply the entire small intestine. Lymphatics form the lacteals which pass through the mesenteric lymph nodes to the cysterna chyli. Nervous supply arises from the superior mesenteric plexus which is continuous with the lower part of the celiac plexus, and follows the blood vessels to form Auerbach's plexus lying between the mucular coats and Meissner's plexus in the submucosa. These fibers arise chiefly from sympathetics and partially from the vagus nerve. After a barium meal, which normally reaches the ileocecal area in 1½ to 2 hours and occasionally as late as 4 hours, the barium can usually be traced in a more or less fixed pattern. The position of the various segments of the small intestine varies because of the relative fixation of the flexible tube at both ends, but normal segmental grouping arising in the left abdomen and following a more or less counterclockwise regional positioning to the pelvis and ileocecal area is usually seen. In addition the segments of the small intestine may be further differentiated by a gradual diminution in caliber from the pylorus to the ileocecal valve, as well as a decrease in the number and size of the plicae circulares.

Incidence

The most common nonspecific inflammatory lesion of the small bowel is regional enteritis, according to Marshak and Wolf.[5] Crohn's disease or regional enteritis is believed to arise in childhood in 10 to 15 per cent of cases. It is two to three times more

*This paper, which was submitted in partial fulfillment of the requirements for certification by The American Osteopathic Board of Radiology, was prepared during a residency at the Allentown Osteopathic Hospital, in the Department of Radiology, of which William L. Tanenbaum, D.O., is chairman.

common in males and is usually most prominent in young adults, 75 per cent being 20 to 40 years of age. Elderly persons are seldom affected, but it does occur in children, particularly adolescents. Bockus[6] feels that the incidence of the disease is rapidly increasing. Most cases are seen in the offspring of emigrants from Southern Europe, particularly Russia and Italy. It is felt that perhaps malnutrition, possibly combined with a heavy infection of some type in childhood, may be to blame. The Jewish race appears to be more affected in the studies of some authors, and the Negro is less frequently affected. Familial susceptibility is being observed more frequently.

It represents a progressive granulomatous inflammatory disease most commonly seen in the distal ileum, but it may occur in the duodenum, jejunum, and colon to the sigmoid area. The length of involvement is usually determined on the initial examination. Proximal and distal extension without operation is uncommon; however, resolution without operation is infrequent.

Etiology

Several authors have advanced theories as to the cause of the condition. Krieg[7] believes regional enteritis to be caused by a deficiency condition and that the curative agent is found within the products of crude liver extract. This conclusion was arrived at by gaining favorable results from the treatment with crude liver extract. The neglected cases with fibrous changes did not respond, however. Casati[8] hypothesizes the metameric segmentation of the small intestine, believing that an independence of each segment explains the production of segmentary ileitis.

Bockus[6] conjectures that the initial lesion prefers the location where the lymphatics are richest. Histologic study of these lymphatics, without the aid of other information, demonstrates the involved lymphatics to be similar to those seen in tuberculosis. Therefore, regional enteritis may represent an initial invasion of enteric tuberculosis, possibly of a bovine variety, being overcome by body resistance but leaving a residuum of partially obstructed lymphatics and predisposing the area to low-grade infection. Bacillus dysenteriae may be the primary infecting agent in some cases.

Acidity of the gastrointestinal tract seems to bear no causal relationship to the formation of inflammatory changes other than segmentation, as was evidenced in a series of 14 cases at Warren General Hospital on which gastric analyses were performed.

Pathology

The pathologic changes are well established; however, classification of the disease has been disputed by several authors. The classical classification of acute, subacute, and chronic regional enteritis was found to be wanting by Marshak and Wolf.[9] They felt that the disease could be classified only by stenotic or nonstenotic pathologic change. Marina[10] felt that two disease complexes were involved: Crohn's malignant regional enteritis, was felt to be a serious, relapsing type of disease produced by an unknown virus; and benign regional enteritis, which represents a superficial ileitis with a good prognosis. Crohn's disease was felt to go through three stages, whereas the benign regional enteritis could stop at any stage and was rarely stenotic. Marina felt, however, that the two entities could not be differentiated by x-ray unless fistula formation was present.

Bailey and Love[11] state that four stages of the disease can be present. The first shows an acute peritoneal reaction simulating acute or subacute appendicitis and is recognized only at operation. The second stage, that of mucosal alteration, demonstrates symptoms of colitis with diarrhea with blood and mucus. The third stage is that of subacute or chronic intestinal obstruction, where the lumen is narrowed, and the fourth stage is that in which adhesions and fistula formation are present. Abscess formation is a common complication of this advanced stage.

The earliest and possibly specific lesion is lymphadenoid hyperplasia, with formation of noncaseating giant-cell groupings in the submucosa. These are also found to be present in the regional lymph nodes, according to Bailey and Love.[11] An ulcerative process is next seen, with small linear ulcerations on the mesenteric side of the intestine, and edema, sometimes yielding a cobblestone effect. The submucosa and muscular layers are thickened. Attempted healing produces a smooth, atrophic mucosal surface. Fibrous tissue formation later causes stenosis with dilatation of the proximal segments. The margins of the stenotic area are abrupt and the area does not progress longitudinally, but skip areas may be present. The mesentery is inflamed and edematous and exhibits large lymph nodes. Abscesses or fistulas may occur in a further progression of the disease process.

In the jejunum there is always a marked stenosis. The length of the stenotic area is short, usually 1 to 3 inches; ulceration is minimal; fistulas are uncommon; and mesenteric thickening is not as marked. There may be, however, three types of stenotic lesions: (1) a single area with proximal dilatation, (2) two areas of narrowing and with dilatation between,

Regional enteritis represents a granulomatous inflammatory disease most commonly seen in the distal ileum, but it may occur in the duodenum, jejunum, and colon to the sigmoid area. Proximal and distal extension without operation is uncommon; however, resolution without operation is also infrequent

and (3) multiple stenotic segments and intervening dilatations.

Kleckner[12] studied 20 consecutive cases of regional enteritis by means of clinical, laboratory, and medical biopsy studies of the liver, and found no hepatic disease in 85 per cent. His conclusion was that, perhaps because of early resection, bacteria or end-products were not seen in the liver because of the time interval. Chapin and his associates[13] autopsied 39 patients with regional enteritis and found the ileum to be involved in all cases, with extension to the colon in 38 per cent. Peritonitis was the cause of death in 49 per cent. Also, granulomatous lesions were absent in other viscera, indicating that the inflammatory lesion of the intestine in regional enteritis did not involve other viscera. Crohn[1] stated that when the disease process is found in the upper gastrointestinal tract it is no longer granulomatous but ulcerating and often stenotic.

Clinical diagnosis

The presence of a palpable mass in a patient with fever, abdominal cramps, diarrhea, and occasional vomiting should make one suspicious of regional enteritis. The abdominal mass is firm, but not hard like a malignant tumor, rarely movable, and is sausage or thumb-shaped. The diarrhea is characterized by two to four loose or semiformed stools per day. Relief or aggravation of discomfort is not noted as consistently as with ulcerative colitis. In addition, pain is often initiated by eating. Occult blood was found in the feces of 60 per cent of the cases studied by Bockus.[6] Clubbing of the fingers and enlargement of the spleen may also be seen. According to Cornell,[14] the fever mimics rheumatic fever, brucellosis, subacute bacterial endocarditis, or lupus erythematosus.

If the process is well advanced, there may be marked wasting with cachexia and avitaminosis due to the altered intestinal pattern. Bockus[6] feels that weight loss is the important finding when attempting to make a diagnosis. The fear of colicky pain causes the patient to decrease the food intake or to limit the intake to liquids only. Also, there is hyperperistalsis, reduction in the absorptive surface of the bowel, and continual loss of blood and plasma. The blood loss causes an anemia, usually of the microcytic hypochromic type, and the bone marrow is hyperplastic.

Polyarthritis, a relatively rare complication, usually disappears when the disease is controlled. Some authors feel that when a rectal abscess is present, the possibility of regional enteritis should be considered. At one time all abdominal wall fistulas were considered to be of tuberculous origin; however, since Crohn's description of regional enteritis and with the decrease in uncontrolled tuberculosis, regional ileitis has come to be considered when a draining fistula is present. About 15 per cent of cases operated will show an external fistula. Frequently a fistula in a scar from a previous appendectomy is encountered. Urethral, vaginal, and rectal fistulas are also encountered.

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Complications consist of recurrence and intussusception. Recurrence is more frequent when operation is performed in the presence of marked ulceration and fistula formation, according to Marshak and Wolf.[9] Intussusception is probably caused by the edema and thickening that develop early in the process and which are followed by adhesion formation.

Roentgen diagnosis

Examination of the small intestine at the Allentown Osteopathic Hospital and Warren General Hospital consists of fluoroscopic pursuit of a barium meal. Fluoroscopic examination is performed every half hour, and films are taken every hour for the first 3 hours. If unusual motility or lack of motility, unusual mucosal pattern, or palpatory tenderness in a specific area is encountered during fluoroscopy, additional films are taken. If after 3 hours adequate progress of the barium meal to the ileocecal area has not occurred, examination continues until 6 hours have passed. Occasionally further films, including a 24-hour film, are required. The examiner should be alerted if, on utilizing the barium meal method, the distal ileum does not fill and will not fill after the retrograde injection of barium into the rectum. Reexaminations are frequently necessary. If an external fistula is present, an attempt should be made to follow its course with contrast medium.

The earliest x-ray film findings consist of blunting, flattening, thickening, and straightening of the valvulae conniventes which are in a regular, rigid-appearing, and transverse distribution. Skip areas may be present. Sante[15] claims that local spasms of the cecum may be noted. DeLorimier[16] states the involved segments may range from several inches to several feet in length. Deutschberger[17] warns of an increased transit time of the barium through the small intestine because of a lack of peristalsis and suggests a loss of flexibility and mobility of the af-

fected loop. There may be "damming back" of the barium so that at 9 hours the barium may not be seen in the terminal ileum.

The disease process continues with evidence of longitudinal streaks and cobblestoning, and finally the lumen is uniform, rigid, and pipelike with no mucous membrane pattern. Large inflammatory polyps may be present, but malignant degeneration is not seen. Dilatation and stenosis may be present. Loss of the normal coiled pattern of the intestinal loops to a straight, rigid pattern may be characteristic. Also the loops may surround a mass of indurated mesentery or an abscess. The regional characteristics may vary.

Kantor[18] described a characteristic sign consisting of formation of a narrowed segment not unlike a frayed cotton string. He believed this to be due to irritability and spasm of the area. Separation of the loops of bowel may be seen as a result of thickening of the mesentery or abscess.

The cecum and ascending colon may be involved. If the ileum and jejunum are the only areas involved, there are more likely to be skip areas and polyps instead of abscesses or fistulas. If the duodenum is involved, short areas of stenosis with minimal ulceration will be visualized. Ileocolitis represents a difficult differential diagnosis; however, the presence of a fistula, thickening of the mesentery, a pressure defect on the medial wall of the cecum, severe narrowing of the affected ileum, and dilatation of the proximal small intestine point to regional enteritis.

The late stage demonstrates matted loops not separable on palpation, forming a mass and possibly a sinus tract and fistulas. The stenotic changes are sometimes difficult to diagnose from the napkin-ring formity of carcinoma. A characteristic fingerlike deformity of the cecum may be seen; this is caused by the thickened ileum and mesentery forming a concavity of the medial portion of the cecum.

Summary

A review of the pathology, clinical findings, and x-ray examination and findings of regional enteritis indicates that the disease is likely to be present anywhere in the entire small intestine, including the duodenum, with occasional involvement of the proximal colon, and less frequently causing alteration of the more distal colon to the level of the sigmoid. Since the symptoms often mimic those found in the more common conditions such as appendicitis, ulcerative colitis, or the various pelvic abscesses, regional enteritis should be considered by the physician in his differential diagnosis of abdominal disorders.

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Barbiturate intoxication: Review of 100 cases*

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The increasing incidence of barbiturate intoxication is a matter of growing concern to the physician. Suicidal barbiturate poisoning is currently in vogue. Intoxication by barbiturates accounts for 20 per cent of the patients admitted to general hospitals with poisoning, and these drugs are responsible for 6 per cent of the suicides—as well as 18 per cent of the accidental deaths—figures exceeded by no other single poison. Despite a mortality rate of only 8 per cent of hospitalized cases, barbiturate poisoning causes about 1,500 deaths annually in the United States.[1]

It is the purpose of this paper to review the treatment of barbiturate intoxication and to demonstrate that much can be gained by managing the problem as one of depressed circulatory and respiratory function. In addition, 100 consecutive cases of patients with barbiturate poisoning admitted to the Los Angeles County Osteopathic Hospital from 1956 to 1958 will be reviewed.

Diagnosis

Acute barbiturate poisoning comes to the attention of the physician as a form of coma and obviously must be accurately differentiated from other comatose states. An additional reason for ruling out other causes for the unconscious state is that frequently powerful stimulation of the central nervous system is employed in the treatment of barbiturate poisoning, but such stimulation may be harmful or even fatal if the coma has another cause.

The diagnosis of acute barbiturate poisoning may be ascertained by either history or chemical identification of the drug in the gastric contents, blood, or urine. There are also available ultraviolet spectrophotometric technics which allow the quantitative determination of barbiturates in the blood within an hour or two.[2]

Treatment

Barbiturates are lethal in three ways:

1. They produce coma, the complications of which may be fatal.
2. They depress the neural regulation of blood pressure to the point where homeostasis is lost.
3. They depress the central neurogenic control of respiration to the point where homeostasis is lost.

The objectives of therapy should consist of three main phases: treatment of coma, treatment of respiration, and treatment of circulation.

Primary measures • In cases of acute barbiturate intoxication, information should be obtained as to the type of drug, dosage, and length of time since ingestion. A table listing the common guides to depth of coma should be made after the initial examination. This should include:

State of consciousness
Response to painful stimuli
Blood pressure
Pulse rate
Respiratory rate, depth, and character
Temperature
State of reflexes (pupillary, corneal, swallowing, biceps, patellar, et cetera)
Miosis (in barbiturate coma, an indication of surgical anesthesia) or mydriasis (an indication of severe hypoxic complications)
Condition of skin (warm or cool, dry or moist, cyanotic)
Pulmonary findings (look for rales and atelectasis)
Urinary output.

If less than 3 or 4 hours have passed since ingestion of the drug, the patient's stomach should be

*This work has been supported by the Attending Staff Association, Los Angeles County Osteopathic Hospital.
†Dr. Gordon is professor and director of the Department of Anesthesiology; and Dr. Haber is clinical instructor in General Medicine at the College of Osteopathic Physicians and Surgeons, and a resident physician in internal medicine, Los Angeles County Osteopathic Hospital.

emptied to prevent aspiration. A large stomach tube is employed, and warm water is used. Lavage may be a diagnostic or therapeutic measure. The procedure is not advised after this length of time, since the drug is rapidly absorbed by the gastric mucosa. After 6 to 8 hours, gastrointestinal absorption may be assumed to be complete, and little danger exists of progressive increase of coma from that source.

Lavage in a comatose patient should be done carefully to avoid aspiration pneumonia. Following gastric lavage with copious quantities of water, it may be advantageous to leave 10 to 15 grams of sodium sulfate in the stomach in an effort to purge the intestinal tract of any unabsorbed barbiturate. Emetics are generally contraindicated because of the danger of aspiration of vomitus. Epsom salts should not be used, since absorbed magnesium may add to cerebral depression.

Respiration • The most important therapeutic measure is to look after the patient's airway. The air passage above the larynx can be blocked by the tongue falling backwards, or by mucus or gastric contents falling into the hypopharynx. Such a complication is easily remedied by use of a hard rubber airway and careful performance of suction.

Oxygen can be administered by means of a catheter placed in the oropharynx via the nose.

In the comatose patient, the airway can be blocked below the vocal cords; this complication requires special measures. When a patient is in deep coma and areflexic, there is frequently no effective ciliary activity in the bronchi. The bronchial mucous membranes, however, continue to produce mucus which easily blocks the finer bronchial branches, resulting in a poor uptake of oxygen and possibly atelectasis. Later, bronchial pneumonia or lung abscess may ensue. The comatose patient may require assistance in discharging the collection of mucus from the bronchi and trachea.

To keep the airway free below the larynx and to be able to maintain cleansing of the bronchial tree, an endotracheal tube should be introduced when indicated and bronchoscopic suctioning should be resorted to if atelectasis becomes manifest.

Routine administration of oxygen is indicated in all but the most severely depressed cases of barbiturate coma. In very deep coma, the respiratory centers may not be responsive to carbon dioxide. In such cases respiration is maintained by hypoxic stimuli arising from chemoreceptors located in the aortic arch and carotid bodies. Oxygen in such cases will remove the cause of the reflex stimulation of the respiratory center, and breathing may cease.[3]

Circulation • Evaluation of the state of the circulation is important throughout the duration of coma. This is accomplished by measurement of the blood pressure, determination of the pulse, noting the color of the skin and mucous membranes, and recording the body temperature.

Peripheral circulatory collapse may result from profound central nervous system depression by drugs. It may also result from less profound depression combined with superimposed anoxia. The latter situation is more frequent in comatose patients, and the status of the circulation usually improves with the establishment of an adequate airway and adequate ventilation.[4]

When blood pressure does fall and there is evidence of peripheral circulatory collapse, the circulation should be supported with long-acting sympathomimetic amines. Blood transfusion or plasma administration may also be utilized. Resort to a vasopressor is probably more justified, since there is usually no disparity between circulatory volume and capacity in barbiturate poisoning.

Coma • The comatose patient should be kept warm at all times. Catheterization is required for every comatose patient in order to determine the adequacy of urinary flow and also prevent bladder distention and formation of decubitus ulcers from constantly dampened bedding. As Beeson[5] has emphasized, however, catheterization should be avoided whenever possible, and the indwelling catheter especially increases the risk of urinary tract infection and severe pyelonephritis.

Adequate fluid intake should be maintained to insure optimal renal function. Parenteral fluid administration is usually indicated in amounts of 3 to 4 liters of 5 per cent glucose with saline, daily. The ketonuria occasionally observed is a starvation ketosis and is easily corrected by glucose administration. Care should be taken to avoid inducement of pulmonary edema by overenthusiastic administration of fluids.

The studies of Weinstein[6] have pointed out the dangers of general antibiotic prophylaxis. Petersdorf and his colleagues[7] investigated the use of prophylactic antibiotics in a group of 72 unconscious patients. Their results indicated that not only was there no benefit from the prophylactic administration of antibiotic drugs in these patients, but that the procedure was deleterious in several cases.

Analeptic drugs, as a rule, afford little additional help and do not provide an adequate substitute for the direct physiologic treatment of depressed respiration or circulation. Nilsson[8] has argued effectively against their use; he demonstrated a lower mortality rate when they were omitted and therapy was directed largely toward the relief of anoxia and maintenance of the patient. However, Koppanyi and Fazekas[9] have marshaled evidence for the rewarding use of analeptics in selected cases.

Hemodialysis, as reported by Kyle and his associates,[10] has demonstrated that barbiturates can be effectively removed from the body with the artificial kidney. This method is twenty to thirty times more effective than urinary excretion in lowering the blood barbiturate level.

Maxwell and colleagues[11] reported a case of severe barbiturate intoxication treated with peritoneal dialysis. The patient had ingested 6.0 grams of secobarbital and amobarbital (Tuinal), several times the lethal dose. It was suggested that the procedure probably saved the patient's life. A total of 1,620 mg. of barbiturate was recovered from the outflow

fluid, or about one third of the amount ingested.

It should be emphasized that intentional barbiturate intoxication is an expression of a primary personality disturbance. Therefore, symptomatic or specific therapy should be followed by adequate psychiatric care.

Review of cases

The remainder of this paper will be a review of 100 consecutive cases of barbiturate poisoning seen at the Los Angeles County Osteopathic Hospital from 1956 to 1958. The group described is representative and provides data, though at times insufficient, to formulate some concepts regarding the problem.

Summary of cases • Seventy-five per cent of the patients reported were women, and the median age of the entire group was 36 years. Of the 100 patients, 48 were comatose on admission to the hospital. The state of the reflexes was at times a confusing criterion of the depth of the poisoning, but 28 were sufficiently comatose not to withdraw from painful stimuli.

Of these 28, 16 were treated with analeptics, predominantly picrotoxin, Metrazol, and amphetamine. Twelve of those in deep coma were not treated with any pharmacologic stimulant; yet all recovered. There were 20 patients who were comatose but would withdraw from painful stimuli. Eleven of these were treated with analeptics, and in 9 they were withheld. There were 3 deaths, a total mortality rate of 3 per cent for all patients. No incapacitating sequelae were observed among the survivors.

The immediate danger was generally respiratory; therefore, the patient's airway was cleaned scrupulously and every step was taken to insure adequate intake of oxygen. Circulatory management included the starting of venoclysis at the time of admission to provide an immediate route for the administration of plasma expanders or vasopressors, if their use seemed necessary.

Some of the comatose patients were treated with artificial respiration, including intermittent positive pressure ventilation. No mechanical body respirator was used.

Comment • In retrospect, the three deaths may have been due to an omission of therapy. Anoxia may have been unnecessarily prolonged, since no resort to tracheobronchial intubation was made. A tracheotomy was performed on one of the patients who died.

It is difficult to ascertain how much additional help was provided by the use of analeptics and whether they provide an adequate substitute for the direct physiologic treatment of depressed respiration or circulation.

The aim of therapy should be the maintenance of such vital functions as respiration, circulation, and excretion, until the barbiturate has been excreted or metabolized. However, a state of prolonged coma is frequently complicated by bronchopneumonia and atelectasis, even if carefully managed. It probably would be wise to reserve the use of analeptics in subjects who show no response to painful stimuli and where cerebral and respiratory depression is marked.

If picrotoxin is used, the first dose should consist of 2 ml. of a solution containing 3 mg. per ml., and it should be given intravenously at the rate of 1 ml. per minute. A response will be indicated by grimacing, muscular twitching, and return of the corneal reflex. The dose should be repeated every 15 minutes until a response is apparent. If convulsions, which are to be avoided, should appear, they may be controlled by thiopental sodium. Metrazol is preferred by many physicians. Five ml. of 10 per cent solution should be given intravenously slowly and repeated every 15 minutes until the patient is out of danger.[12]

The objective in analeptic therapy is to restore and continuously maintain active reflexes, spontaneous, involuntary movement, and responsiveness to pain until sufficient barbiturate is eliminated to insure recovery and yet not produce convulsive twitchings from an overdose. One does not attempt to restore the patient to full consciousness by drug therapy. Indeed, this is an impossibility; convulsions will occur and cause additional central depression.

In one of the cases reviewed, a severely comatose patient was administered carbogen, a mixture of oxygen and carbon dioxide. This is irrational. It is potentially dangerous to administer this combination of gases to barbiturate-poisoned patients unless artificial respiration is being concomitantly employed. In severely poisoned patients, there is sufficient depression of the sensitivity of the respiratory center to carbon dioxide so that the stimulus for respiration must derive largely from the effect of hypoxia on the aortic and carotid chemoreceptor mechanisms, and the administration of oxygen will ablate this as well. As for carbon dioxide, there is already enough of that in the patient's circulation; the additional amount will actually depress the respiratory center.

Summary

The treatment of barbiturate intoxication has been discussed, and 100 consecutive cases admitted to the Los Angeles County Osteopathic Hospital have been reviewed. Emphasis is placed on the management of the problem as one of depressed circulatory and respiratory function.

It is the contention of this paper that the treatment of barbiturate poisoning should be directed toward three problems:

1. Maintaining physiologic respiratory exchange
2. Maintaining physiologic circulatory activity
3. Preventing the complications of coma.

No method of general systemic stimulation provides an adequate substitute for direct physiologic treatment of depressed respiration or circulation.

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The heart in anemia

PHILIP M. LESSIG, M.A., D.O., and MILLARD BASS, D.O.,* Philadelphia, Pennsylvania*

Many years ago it was pointed out that anemia is not uncommonly associated with cardiovascular disturbances. Early investigators[1-3] found that anemia could result in anoxia to the body with resultant impairment of normal function. Anemia was recognized as a noxious influence to health, and it was said that disease began when the natural capacity of the human organism to resist and combat this influence was reduced.

At the turn of the century, attention was focused on the anginal syndrome in association with pernicious anemia. In 1927, Blalock and Harrison[4] showed that cardiac output and percentage utilization of available oxygen in the blood was increased in anemia following hemorrhage. Other observations made in the late 1920's and early 1930's[5] on dogs and human beings indicated that progressive increase in the cardiac output occurred in severe chronic anemia. The exact point at which the rise in cardiac output first occurred was a matter of some dispute. Ellis and Faulkner[6] reported that it took place at a hemoglobin level of about 7 grams. Further observations[7-9] noted that both dilatation and hypertrophy of the heart occurred in patients with anemia, but there was no direct relationship between the incidence or degree of enlargement and the severity of the anemia. These investigators found that with the return of the hemoglobin to normal levels, the cardiac size usually returned to normal limits. In addition to dilatation and hypertrophy, the anemic heart was found at necropsy to have undergone a form of fatty degeneration characterized by yellow streaking visible on the endocardial surface. In cases of anemia due to massive hemorrhage, the cardiac musculature was firm; in cases of chronic prolonged anemia the musculature was flaccid.

Understanding of the link between anemia and the heart aids in the interpretation of signs and symptoms of a variety of clinical manifestations referable to the cardiovascular system. Anemia means essentially a deficiency in the oxygen-carrying power of the blood through the reduction in hemoglobin. In anemia, the two adjustments that serve to maintain oxygen supply to the tissues are: (1) an increase in the circulation rate (cardiac output), and (2) increased removal of available oxygen. A third adjustment may be an active decrease in the blood volume. The vessels of the skin are constricted, and a greater proportion of the blood volume is driven through other organs.

The extent to which circulatory readjustments can compensate for the blood deficit is limited. When the point is reached where the extra demand for oxygen cannot be met, oxygen want follows and the respiratory mechanism is stimulated, resulting in hyperpnea and dyspnea.

The available data seemingly support the opinion that primary cardiac dilatation is a physiologic adjustment resulting from an increase in the cardiac output in the presence of a supply of anemic blood through the coronary arteries to the myocardium. If, however, prolonged dilatation continues, with stretching and injury to the myocardial fibers, cardiac hypertrophy inevitably develops.

In studying cases of severe anemia due to hookworm, Porter[10] regularly observed cardiac enlargement. Following treatment for the parasitic infestation, the cardiac silhouette in most cases returned to normal. He also found that in long-standing cases the cardiac size remained unchanged following adequate therapy and the reason, he concluded, was hypertrophy.

Tung, Bein, and Ch'u,[11] reporting in the *Chinese Medical Journal*, noted six cases of marked cardiac

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enlargement and congestive heart failure in patients with severe chronic anemia. Both the cardiac enlargement and cardiac failure in these cases disappeared when the anemia was corrected.

There is a wide diversity of opinion as to the frequency and extent of electrocardiographic changes in anemia. Levine[12] notes that in anemia a low R wave and S wave below 5 mm. in all leads may occur. These low waves may also be found in myxedema, Addison's disease, pericardial effusion, or any other condition showing considerable edema. Friedberg[13] describes the common electrocardiographic changes in anemia as depression of the S-T segment and flattening or inversion of the T waves, findings suggestive of myocardial anoxia.

Keith, Rowe, and Vlad[14] reported on the electrocardiograms of a boy 13 years of age with leukemic anemia and a hemoglobin of 1.7 grams. The electrocardiograms demonstrated left ventricular hypertrophy with depression of the S-T segment. Twelve days later, after two blood transfusions, the S-T segment had returned to normal and the signs of left ventricular hypertrophy had diminished. Szekely,[15] in the *British Heart Journal*, described a case of severe hypochromic anemia following profuse hematemesis in which inversion of leads II and III occurred. The electrocardiographic changes disappeared entirely at an early stage even though only a minor improvement of the anemia had occurred. Because there was no close parallel between the degree of anemia and that of cardiac disturbance, Szekely believes that electrocardiographic changes are not due merely to anemia causing anoxia of the heart muscles, but also to another factor. He describes the additional factor as being of reflex vasomotor character. The trigger mechanism is set off by the anemia which in turn causes altered coronary volume flow with coronary insufficiency.

Scherf, Reinstein, and Klotz[16] reported abnormal electrocardiographic changes after profuse hemorrhage in gastric ulcer. The tracings were altered in 11 of 16 such cases, and the changes were pronounced in 8. The electrocardiograms became normal again within a few days. The hemoglobin level often remained low or had fallen even further when the tracing reverted to normal. Moreover, blood transfusions did not influence the electrocardiograms. It was their opinion that the changes were not due to anemia but to a reflex adjustment of the circulation following acute blood loss. The participation of the coronary arteries in the general vasoconstriction was presumed to create coronary insufficiency and a reduction of the cardiac supply. However, since it was impossible to evaluate the organic status of the coronary vasculature and myocardial changes, the presence, extent, or absence of arteriosclerosis in the coronaries might well have influenced the findings. The coexistence of coronary arteriosclerosis and fatty changes along with anemic anoxia may in some patients be responsible for abnormal electrocardiographic changes.

We have observed severe anemia without pathologic electrocardiographic changes in a patient who was exsanguinating from a malignancy of the colon.

Case report

A 35-year-old Negro minister was admitted to Metropolitan Hospital in January 1959 with a visibly protuberant abdomen. In October 1957 this patient had been admitted to another hospital with the working diagnosis of "mass in abdomen"; the final diagnosis was carcinoma of the transverse colon. He had been subjected to a palliative resection of a large cancer of the transverse colon; a portion of the greater curvature of the stomach was involved with tumor and was also resected. Since metastasis was evident, the procedure was not considered curative; yet it was hoped that this palliative procedure was worth while to relieve the patient's bleeding and obstruction. The patient survived the operation and was discharged in December 1957.

On admission to the Metropolitan Hospital, in 1959, the patient complained of abdominal discomfort and mild backache. Physical examination revealed this man to be chronically ill. Periorbital edema was noted and an abdominal mass the size of a grapefruit was palpated. A freely movable left supraclavicular lymph node the size of a walnut was detected. His oral temperature was 102 F, pulse rate was 90 per minute, and blood pressure was 130/68. The admission blood count reported hemoglobin of 6.25 grams and a hematocrit reading of 26. The leukocyte count was 14,000 per cu. mm. and the sedimentation rate was 32. The prothrombin time was normal. At the time of admission he was not dyspneic at bedrest.

An electrocardiogram taken on admission (Fig. 1) was reported as normal. The cardiac rate was approximately 90 beats per minute. The P-R, QRS, and Q-T intervals were all within normal limits. Because of his religious beliefs, he refused blood transfusion.[17] He said that he would submit to any surgical procedure deemed necessary for relief and would accept all types of medication provided he did not receive blood. His wife was of the same conviction.

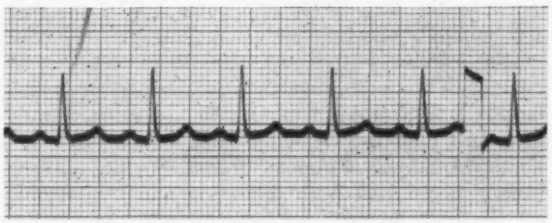

Fig. 1. Electrocardiogram (lead aVF) taken on January 14, 1959, when the patient was admitted to the hospital. The hemoglobin at that time was 6.25.

For the next 10 days until his death he was given intravenous infusions of glucose, fatty hydrolysates, and artificial blood volume expanders. The periorbital edema, considered to be due to the low plasma osmotic pressure caused by deficient blood proteins, remained unchanged. His clinical course was rapidly downhill with massive rectal bleeding, delirium,

grand mal seizures, and shock. Three days before death, dyspnea occurred at bedrest and he was placed in an oxygen tent. Twenty-four hours before he died, his hemoglobin was below 3 grams and the hematocrit below 12. During the course of his hospitalization serial electrocardiograms were taken, the last graph being recorded only a few hours before death (Fig. 2). During the 10 days of hospitalization, while this man exsanguinated, there were no observable pathologic electrocardiographic changes.

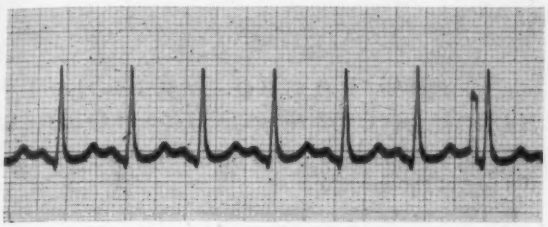

Fig. 2. Electrocardiogram (lead aVF) taken 10 days later than Figure 1, and only a few hours before the patient's death. The hemoglobin at that time was below 3 grams.

At autopsy, a large mass was noted involving numerous loops of small and large intestine. The heart *in situ* measured 17.5 by 13.5 by 8 cm., and the weight was 460 grams. The musculature was found to be exceedingly pale and the left ventricle hypertrophied. The wall of the left ventricle measured 3.4 cm. in its greatest thickness. The right side of the heart showed dilatation; the right ventricular wall measured 0.4 cm. in its greatest thickness. The tricuspid valve was found to be normal. The mitral curtain displayed some wrinkling and contraction with numerous thickened verrucae behind the free margins. The anterior leaflet particularly showed evidence of scarification which involved the chordae tendineae of the valve leaflet as well as the the papillary muscles. The more proximal portion of this leaflet displayed focal deposition of atheromatous material. The endocardial surfaces of both ventricles were smooth, pale, and glistening, and no suggestion was present of intramural thrombi or myocardial infarction. The pulmonary and aortic cusps were normal. Both coronary ostia were patent, and the coronary arteries were normal. The first portion of the aorta displayed focal deposition of atheromatous material, but no ulcerations or calcifications were identified.

Summary

We have reported a case of terminal carcinoma with severe anemia in which no pathologic electrocardiographic changes were noted. Autopsy revealed hypertrophy of the left ventricle and dilatation of the right ventricle. The coronary vessels were normal. However, it has long been recognized that the heart can be affected in anemia. Cardiac dilatation followed by hypertrophy is a common finding in severe chronic anemia. Frequent cardiac adjustments which take place in anemia are an increased cardiac output and increased oxygen utilization. Alterations in cardiac blood volume due to vasomotor changes may explain the electrocardiographic changes. Coexistent arteriosclerosis with decreased patency of the coronary vessels and fatty changes in the myocardium also must be considered as influencing the electrocardiographic picture in anemia.

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New concept of cephalopelvimetry

Correction

The two tables below were omitted through editorial error from the article, "New Concept of Cephalopelvimetry: Simplified Low-Dosage Direct-Film Measurement Technic," by Philip Shtasel, D.O., and Melvin G. Jaspan, D.O., Philadelphia, which was published on pages 972-978 of the August JOURNAL. We regret the mistake.

Corrected reprints may be obtained by writing the authors at the Metropolitan Hospital, 300 Spruce Street, Philadelphia 6.

TABLE III—TECHNICS DEVELOPED BY INTERCHANGING VARIABLES

Distance	Regular: Films Screens Solution	Rapid 1: Films, or Screens, or Solution	Rapid 2: Films and screens, or Films and solution, or Screens and solution	Rapid 3: Films Screens Solution
Three feet	198* / 497 / I / *100†* / *300*	120 / 160 / II / *75* / *225*	75 / 140 / III / *56* / *170*	47 / 95 / IV / *45* / *130*
Eight feet	80 / 200 / V / *300* / *400*	58 / 120 / VI / *210* / *300*	39 / 119 / VII / *150* / *250*	25 / 62 / VIII / *100* / *200*
Ten feet	74 / 153 / IX / *400* / *600*	56 / 138 / X / *300* / *500*	30 / 105 / XI / *200* / *400*	30 / 70 / XII / *150* / *300*
Twelve feet			38 / 89 / XIII / *300* / *500*	26 / 60 / XIV / *300* / *400*

*Nonitalicized numbers in each group represent milliroentgens received in the midpelvic region; number at top is the anteroposterior projection dosage and number below is the lateral projection dosage.

†Italicized numbers in each group represent milliampere-second values; number at top is for the anteroposterior view, and the number below for the lateral view.

TABLE IV—KILOVOLTAGE FOR VARIOUS PATIENT SIZES

Centimeters	26	27	28	29	30	31	32	33	34	35	36	37	38	39
Anteroposterior	82	84	86	88	90	92	96	100	104	108	112	116	120	124
Lateral	..	..	..	104	106	108	110	112	114	116	118	120	122	124

EDITORIALS

THE JOURNAL OF THE AMERICAN OSTEOPATHIC ASSOCIATION

This periodical is the official publication of the American Osteopathic Association.

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The profession at Kansas City in 1960

An editorial report

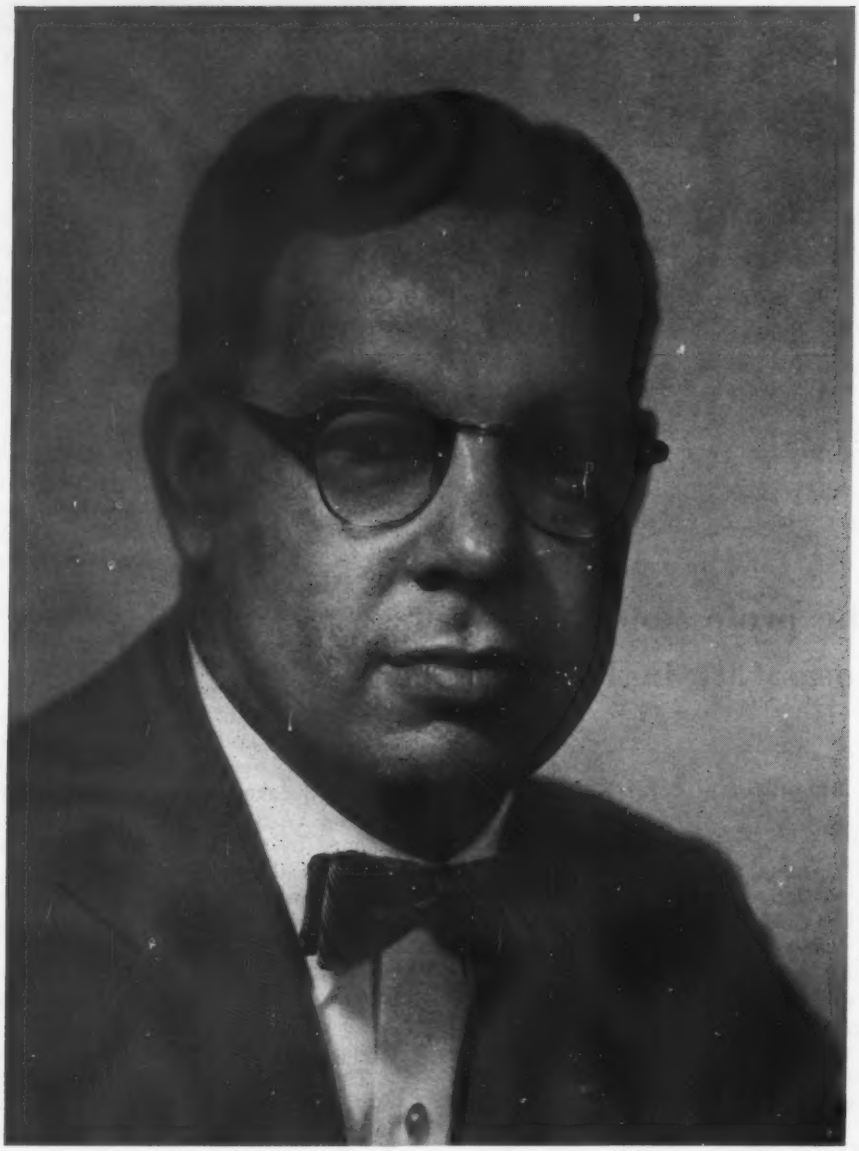
The sixty-fourth Annual Convention of the American Osteopathic Association returned to Kansas City, scene of the 1916 Convention, on the soil of the profession's native state of Missouri. The 1960 Convention was the last, at least in the already scheduled future, to bring together the legislative and the clinical assembly programs of the national association at the same time and place. By action of the Board of Trustees and House of Delegates the 1961 Annual Convention of professional programs and presentations will be held in January in Miami Beach, Florida. The House of Delegates will continue the midsummer tradition by holding its annual congress in Chicago next July. This will be designated as "The Meeting." It is proposed to follow this calendar arrangement through future years, subject to change as voted. The Board of Trustees will have a midwinter meeting in Miami Beach as well as next July in Chicago.

In Kansas City Dr. Roy J. Harvey, Midland, Michigan, was inaugurated as President, receiving the toga from Dr. Galen S. Young, Chester, Pennsylvania, who wore it with distinction and firm dedication to his profession and his profession's ideals, particularly in the field of osteopathic education. Dr. Charles L. Naylor, general practitioner of Ravenna, Ohio, who took over from Dr. Young 2 years ago as Osteopathic Progress Fund chairman, was named President-Elect. Re-elected to the office of First Vice President was Dr. Wesley B. Larsen, Chicago. Dr. James H. McCormick, Elkhart, Indiana, was elected for another term as Third Vice President. A new Second Vice President was named in the person of Dr. Loren R. Rohr, Houston, Texas. Dr. J. Mancil Fish, Tulsa, Oklahoma, Second Vice President in the Young administration, is one of two new members of the Board of Trustees. The other is Dr. Earl K. Lyons, Elkins, West Virginia, who will succeed Dr. Naylor as Osteopathic Progress Fund chairman. Dr. William B. Strong, Des Moines, Iowa, was re-elected to the Board to fill Dr. Naylor's unexpired term. Three other Board members whose terms expired in 1960 were re-elected, namely, Dr. Ira C. Rumney, Ann Arbor, Michigan, Dr. Eugene D. Mosier, Puyallup, Washington, and Dr. John W. Hayes, East Liverpool, Ohio.

The Speaker of the House of Delegates, Dr. Charles W. Sauter, II, Gardner, Massachusetts, acclaimed by the House members when he lifted the gavel for the first call to order Sunday afternoon, July 17, in the Muehlebach Hotel's Grand Ballroom, and presented with an engraved wrist watch in expression of the House esteem for him in his 10 years of speakership, was re-elected to start another decade of conducting the legislative sessions. His right-hand man for the past 9 years, Vice Speaker Dr. Philip E. Haviland, Detroit, was re-elected to office.

The Board of Trustees meeting started on Tuesday, July 12, with full sessions and reference committee deliberations, preparing its recommendations for House consideration and action. The Board continued to meet through the week of House congress; then, with appointments made to the departments, bureaus, and committees, the American Osteopathic Association's organizational units marched into another busy year of furthering the profession's purposes in the interests of the national health.

The members attending the Convention were given broad-screen presentations of its theme, "Perspectives from the Past—65 Years of Osteopathic Progress," in its profundity of basic philosophy, its high ideals, its wide horizons, set in the perspective of our social order and in medical history by Past



Dr. Roy J. Harvey

President, 1960-1961

President George W. Northup in his keynote address Monday morning, in Dr. Young's address at the Presidential Banquet Monday evening, and Dr. Harvey's address when he assumed office at Thursday's Inaugural Banquet. Dr. Northup impressed on his hearers the vital importance of keeping the programs inside the profession distinct in our thinking from the profession's over-all purpose. The Andrew Taylor Still Memorial Lecture by President Morris Thompson of Kirksville College of Osteopathy and Surgery presented logical grounds for his declaration that "we are entering the osteopathic era." He emphasized the obligation to the public shouldered by every institution wearing the badge of osteopathy in its name and every individual osteopathic physician. "Osteopathy—a public trust" was his sum-up.

The profession's responsibility

Through all the high-level presentations and winding into the individual platform patterns was this golden thread of the recognition of responsibility to the public as well as to the profession itself. Fittingly enough the Convention's attention as it approached its closing was directed to the very pertinent topic of our national disaster-health manpower.

"Convention of Responsibility" would serve as a final phrasal sum-up of the week's application of the keynote message, advancing the profession's 65-year progress record into the perspective of the present and future. On Thursday the A.O.A. responsibility in the nation-wide work of preparing for possible thermo-nuclear attack was presented before the Board and the House of Delegates by Carroll P. Hungate, M.D., Kansas City, consultant to the U.S. Public Health Service and chairman of the American Medical Association Committee on Disaster Medical Care and of the Defense Council's Medical Health Committee.

In the afternoon at a general meeting in the Municipal Auditorium, John M. Whitney, M.D., Dallas, Texas, General Health Consultant of the United States Public Health Service, Region VII, Department of Health, Education, and Welfare, gave the details of the preparatory measures as established and as projected. He limned the picture of possible mass destruction of unprecedented magnitude by nuclear weapons and perhaps bacteriologic and chemical warfare.

These grave considerations pressed home the basic message of the Convention's key speakers and added meaning and depth to everything that had been presented and to the residual convictions thereby engendered.

Figures and facts

As the 5 days of meetings and entertainment progressed, the 2,003 registrants found it very good indeed. They liked the way the Convention was managed. They praised the Kansas City Convention Committee, headed by Dr. James A. DiRenna, general chairman, with Dr. Charles A. Povlovich, honorary chairman, and the A.O.A. Bureau of Conventions, which has Executive Director Dr. True B. Eveleth and Business Manager Walter A. Suberg as chairman and vice chairman. One and all enjoyed the Kansas City environment, the friendliness of the people in the restaurants and shops, and the homelike atmosphere of a healthy city's daily living. There was a program of entertainment for wives and children of conventioners, excursions to points of interest in and about the city.

The 909 D.O.'s and the 243 students from osteopathic colleges were very appreciative of the meaty program laid before them by the program chairman, Dr. Raymond L. Ruberg, Philadelphia. Dr. Ruberg presented a series of busy and rewarding features both morning and afternoon each day.

Special lecturers included nationally known authorities: Raymond F. Gould, Ph.D., of the National Institute of Mental Health; Stuart M. Sessoms, M.D., National Institutes of Health, on "The Development and Current Status of the Program of the Cancer Chemotherapy National Service Center"; Lamar Soutter, M.D., Dean of the School of Medicine, Boston University, on "A New Combined Liberal Arts-Medical Program of Education at Boston University"; and Frederick H. Hencken, Ph.D., Smith Kline and French Laboratories, on "The Clinical Utility and Side Effects of Prochlorperazine in Children."

Preparing for the next Convention in January at Miami Beach, next year's program chairman, Dr. Ward E. Perrin, Chicago, gave the Board and House his program's general outlines, already well on the road to completion. At the Program Committee Luncheon Thursday Dr. W. Clemens Andreen, Wyandotte, Michigan, was chosen chairman of the 1962 Program Committee.

The total attendance of 2,003 was an increase of 298 above last year's Convention in Chicago. Besides the D.O.'s and the students, there were 18 associate members, 422 guests, most of them members of physicians' families, and 411 exhibitors.

A particular welcome was extended to Dr. Donald R. Dilworth, of Riobamba, Ecuador, who had a booth in the Municipal Auditorium with a portrayal of life in his South American missionary field; to the Canadians, Dr. Allan A. Eggleston, Montreal, Dr. Rosamond Pocock and Dr. Donald A. Jaquith, Toronto, Dr. William Kimball Church, Orillia, Ontario, Dr. Douglas F. Lauder, London, Ontario, and Dr. Frederick H. Deeks, Winnipeg, Manitoba.

Hailed for their long-distance treks to midland U.S. were the representatives of our newest states, Dr. W. G. Sutherland, Anchorage, Alaska, and the gentle, invincible pair from Hawaii, Drs. Josephine and Isabelle Morelock, of Honolulu, with their neighbor, Dr. Joseph W. Stella, Kailua, Oahu.

Opening session

The Convention's general sessions began at 10:30 Monday morning in the Municipal Auditorium's Little Theatre. President Young called the Convention to order. The invocation was pronounced by Rabbi Maurice D. Solomon, Kehilath Israel Synagogue of

Dr. Charles L. Naylor
President-Elect

Dr. Wesley B. Larsen
First Vice President

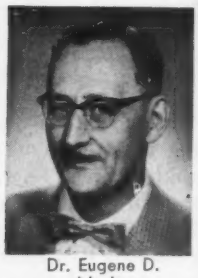
Dr. Loren R. Rohr
Second Vice President

Dr. James H. McCormick
Third Vice President

Dr. J. Mancil Fish
Trustee for Three Years

Dr. John W. Hayes
Trustee for Three Years

Dr. Earl K. Lyons
Trustee for Three Years



Dr. Eugene D. Mosier
Trustee for Three Years

Dr. Ira C. Rumney
Trustee for Three Years

Dr. William B. Strong
Trustee for Two Years

Dr. Charles W. Sauter, II
Speaker, House of Delegates

Dr. Phillip E. Haviland
Vice Speaker, House of Delegates

Kansas City. Dr. Young then presented Dr. Ruberg as program chairman.

The official welcome of city and state extended by the Honorable H. Roe Bartle, Kansas City Mayor, was heart-warming in its cordiality and sincerity. Dr. Northup's Keynote Address followed. After the noon recess, Raymond F. Gould, Ph.D., discussed "Juvenile Crime and Aid as Seen from the Mental Health Viewpoint."

The day's sessions climaxed with a round-table discussion, "Present-Day Concepts of Osteopathy." Dr. R. McFarlane Tilley, dean of Kirksville College of Osteopathy and Surgery, was moderator. Participants in the discussion were Dr. Campbell A. Ward, Mount Clemens, Michigan, Dr. Herman Kohn, Philadelphia, and last year's convention keynote speaker, Irvin M. Korr, Ph.D., Kirksville.

President's banquet and ball

Monday evening in the Municipal Auditorium, the first important social event of the Convention was the traditional President's Banquet and Ball. Dr. Arnold Melnick, Philadelphia, as toastmaster moved the program along with celerity and sparkle. Dr. G. R. Thomas, Oklahoma City, made the Oklahoma Association's presentation of a ceremonial Indian headdress to President Young following his address and an Indian head band to Mrs. Young.

"In the archives of no other profession are there to be found representatives who have better combined intellectual pre-eminence with nobility of character," declared the President. "The history of some professions is a record of resistance to new truths which would overrun familiar and comfortable cliches. That

progress is made in many areas is due to the presence of men who spurn conventionality to follow their own quest for truth."

He cited a surgical lecture in 1873 in which one of the leading scientists of the day expressed the conviction that the limitations of surgery had been reached, yet within a mile of where this statement was made, and within the same year, came Lister's announcement of the then new doctrine of sterilization which was to revolutionize the entire practice of surgery.

"I charge you," he said, "as members of a great profession, to study out the secrets of nature by way of experiment and scientific exploration and to facilitate the growth of wisdom and truth for the welfare and preservation of humanity. If these virtues become an everyday application in our respective practices, then we, too, will deserve that never-dying summons, 'Well done, thou good and faithful servant. Thou has applied wisdom unto thy heart.'"

Sigma Sigma Phi awards and new honorary members were announced by Dr. Wilbur V. Cole, Kansas City, the fraternity president, who then made a special award to Dr. S. V. Robuck, Chicago, the fraternity's founder and guiding light over many years.

Inaugural banquet

Beginning with the President's Banquet the schedule was studded with social events, each with its special appeal, and all building up to Thursday night's Inaugural Banquet and Entertainment.

Dr. Harvey's installation as the sixty-third President by retiring President Young was highlighted by a telegram from Governor G. Mennen Williams of Michigan:

"Please accept my sincere congratulations on the occasion of your installation as President of the American Osteopathic Association. You bring new honors to our state as you become the fifth Michigan man to serve as Association president. This is a deserved tribute to a man who has been active in state and national organizations for many years. It is an expression of the respect and affection of your colleagues which is shared by your many Michigan friends. Please express to the delegates my best wishes for a successful convention."

The new President chose for his inaugural theme an aphorism by the late Reverend Peter Marshall, Chaplain of the United States Senate, "You had better stand for something or you will fall for anything."

"I stand for osteopathy and the osteopathic profession," declared Dr. Harvey. "I am proud to be an osteopathic physician. I am proud to use my talents to apply the principles of health and disease which are fundamental to human life and to our profession. I believe in the past achievements of osteopathy, its present strivings, and its future ambitions. I believe that it has a future bright with promise and vital to the advancement of the healing arts."

Dr. Harvey is a lifelong resident of Michigan. He was born in Cadillac and practiced in Gaylord before moving to his present location in Midland. He is on the staffs of Bay Osteopathic Hospital, Saginaw Osteopathic Hospital, and Clare General Hospital.

A 1938 graduate of Kansas City College of Osteopathy and Surgery, he was a trustee of the Michigan Association of Osteopathic Physicians and Surgeons from 1945 to 1953. He was its president in 1953-54. In 1956 he began serving on the A.O.A. Board of Trustees. He became chairman of the Committee on Firms and Corporations of the A.O.A. Council on Development.

Father of four children, Dr. Harvey has carried his interest in young people into work with the Parent Teachers Association and the Boy Scouts of America. For 7 years he has been the Midland High School physician. He is a member of the First Methodist Church of Midland, the Shrine, Kiwanis International, and the International Order of Odd Fellows. He was president of Midland Kiwanis Club in 1956. His osteopathic fraternity affiliations are the Atlas Club and Sigma Sigma Phi.

Starting in 1948, he has been elected coroner of Midland continuously. He served on the annexation committee of the county school board and the Midland city electrical board.

He thus brings to the office of A.O.A. President a bright record of public service, community interest, and vigorous approach to organization work, making an effective background for his forthright declaration of "the affirmative stand."

Honors awards

As Inaugural Banquet master of ceremonies, Dr. Young introduced the other new national officers and Board members and presented special awards honoring individuals who have served the profession. Distinguished service certificates were received by Dr. Alexander Levitt, Brooklyn, for service in education and organization, Dr. J. Paul Leonard, Detroit, for service in hospital development, and Dr. Stephen B. Gibbs, Coral Gables, Florida, for professional service. Dr. Levitt and Dr. Gibbs are former members of the A.O.A. Board of Trustees. Dr. Leonard is chairman of the Board of Detroit Osteopathic Hospital.

Dr. Phil R. Russell, Fort Worth, Texas, executive secretary of the Texas Association of Osteopathic Physicians and Surgeons, was presented with the Andrew Taylor Still Medallion of Honor in behalf of the Academy of Applied Osteopathy by its president, Dr. Margaret H. Raffa, Tampa, Florida.

The general practitioner of the year award by the American College of General Practitioners in Osteopathic Medicine and Surgery was presented to Dr. Whitlaw M. Show, Bird-in-Hand, Pennsylvania, by Dr. Richard O. Brennan, Houston, Texas.

Dr. Angus G. Cathie, Professor of Anatomy at Philadelphia College of Osteopathy, was presented with the Psi Sigma Alpha award by Dr. John W. Hayes, East Liverpool, Ohio.

Topping off his inaugural evening, President Harvey accepted the Gavel Club award presented by Dr. Stephen M. Pugh, Everett, Washington.

Specialty colleges

Assessing the past year's work, debating existing problems, and girding themselves for the organizational and educational projects in the term ahead, the twelve specialty colleges put in a busy week.

Dr. E. Homer Gabriel, Tulsa, Oklahoma, assumed the presidency of the American Osteopathic College of Dermatology and Dr. Paul E. Courtney, Ferguson, Missouri, was named president-elect. Dr. Harry B. Elmets, Des Moines, Iowa, was elected vice president. Dr. Sidney D. Rothman, Los Angeles, continues as secretary-treasurer. Dr. Daniel Koprince, Royal Oak, Michigan, was named 1961 program chairman. New members of the Board of Trustees are Dr. Elmets, Dr. Koprince, Dr. Benjamin C. Scharf, Seaford, Long Island, New York, and Dr. Robert G. Shimmel, Lincoln Park, Michigan.

The American College of Neuropsychiatrists chose Dr. Harold E. Higley to be president-elect as Dr. Andrew T. Still, Macon, Missouri, moved from that office into the college presidency. Dr. George H. Guest, Philadelphia, was elected vice president and tentatively assigned to the 1961 program chairmanship. Dr. Don C. Littlefield, Long Beach, California, continues as secretary-treasurer.

The neuropsychiatrists, looking toward the future, endorsed an extensive public relations program aimed at emphasizing training opportunities, and made it their spearhead in the presentation to the Convention in its opening teaching sessions. The A.C.N. began meeting on Friday preceding the Convention opening and held a Saturday night banquet at the Golden Ox, at which the president, Dr. Thomas J. Meyers, Los Angeles, presented an honor plaque to Dr. Wilbur V. Cole, Kansas City, in making him a Fellow of the college.

Dr. Arthur L. Wickens, Mt. Clemens, Michigan, secretary-treasurer of the American Osteopathic College of Pathologists, was named president-elect as the college lined up its officers for the new term. Dr. Ruth E. Waddel, Norristown, Pennsylvania, became immediate past president as Dr. Norman W. Arends, Detroit, moved up to the presidential chair. Dr. Francis S. Buck, Pasadena, California, was elected vice president, and the new secretary-treasurer is Dr. George E. Himes, Flint, Michigan. Dr. William L. Silverman, Merion, Pennsylvania, and Dr. Miguel M. Alvarado, Dayton, Ohio, continued on the Board of Governors with two new members elected, Dr. W. Harriett Davis, Burbank, California, and Dr. Arthur E. Nichols, Aurora, Colorado.

The pathologists began their convention program with a Board of Governors dinner in the Muehlebach Cask Room Sunday evening and held their annual banquet Wednesday evening, with an all-day seminar Monday, their regular meeting Tuesday with a reception in the evening, and laboratory sessions Wednesday afternoon. The college announced its decision to hold its next seminar in Detroit in May 1961.

Dr. William H. McGill, Oak Park, Michigan, is the new president-elect of the American Osteopathic College of Physical Medicine and Rehabilitation. Dr. Thomas D. Webber, Saginaw, Michigan, took the chair as president with Dr. John A. Schuck, Los Angeles, continuing as secretary-treasurer.

The specialty colleges which hold their election meetings at other times than the national Convention were represented heavily throughout the general scientific program schedule. The American College of Osteopathic Obstetricians and Gynecologists, of which Dr. Frank E. Gruber, Philadelphia, is president, and Dr. Arthur A. Speir, Merrill, Michigan, secretary-treasurer, held a Board of Trustees meeting. The American College of Osteopathic Surgeons, with Dr. Milton V. Gafney, Dallas, Texas, president, secretary-treasurer Dr. Charles L. Ballinger, Coral Gables, Florida, executive secretary Mrs. Esther F. Martin, also of Coral Gables, held six committee meetings. The orthopedists, headed by their president, Dr. Robert O. Fagen, Pontiac, Michigan, and secretary Dr. J. Paul Leonard, Detroit, held a Board of Directors meeting. A meeting was held by the anesthesiologists; their president is Dr. John S. Stratton, San Gabriel, California, and their secretary-treasurer is Dr. Crawford M. Esterline, Kirksville, Missouri.

Specialty boards

The Advisory Board for Osteopathic Specialists, of which Dr. Thomas J. Meyers, Los Angeles, is chairman, and Mr. Lawrence W. Mills, Chicago, secretary, met July 17 and 18 in the Convention hotel. The function of this Board is to review the candidates for specialty certification approved by the individual specialty boards and to make recommendations for certification action by the A.O.A. Board of Trustees. Seven specialty boards held business meetings during the Convention period:

Anesthesiology, Dr. K. George Tomajan, Boston, chairman, Dr. J. Craig Walsh, Philadelphia, secretary-treasurer, and Mrs. Esther F. Martin, Coral Gables, Florida, corresponding secretary; dermatology, Dr. Walter L. Willis, Conshohocken, Pennsylvania, chairman, Dr. A. P. Ulbrich, Detroit, vice chairman, and Dr. Sidney D. Rothman, Los Angeles, secretary-treasurer; neurology and psychiatry, Dr. K. Grosvenor Bailey, Los Angeles, chairman, Dr. Cecil Harris, Philadelphia, vice chairman, and Dr. Floyd E. Dunn, Kansas City, secretary-treasurer; obstetrics and gynecology, Dr. Dorothy J. Marsh, Glendale, California, chairman, Dr. Frank E. Gruber, Philadelphia, vice chairman, and Dr. Jacquelin Bryson, Denver, secretary-treasurer; physical medicine and rehabilitation, Dr. Wallace M. Pearson, Kirksville, Missouri, chairman, and Dr. Robert C. Ruenitz, Los Angeles, secretary-treasurer; proctology, Dr. George R. Norton, Fort Lauderdale, Florida, chairman, and Dr. Carlton M. Noll, Blissfield, Michigan, secretary-treasurer; surgery, Dr. James M. Eaton, Philadelphia, chairman, Dr. Arthur M. Flack, Jr., Philadelphia, vice chairman, Dr. Charles L. Ballinger, Coral Gables, Florida, secretary-treasurer, and Mrs. Esther F. Martin, Coral Gables, Florida, corresponding secretary.

Affiliated organizations

Eleven of the organizations affiliated with the American Osteopathic Association held meetings at Convention time.

The Academy of Applied Osteopathy was in active participation with the general scientific program of the Convention Monday through Thursday, reserving Friday, closing day of the Convention, for its annual luncheon, at which it received the report from the retiring president, Dr. Margaret H. Raffa, Tampa, Florida. Its afternoon program featured the business meeting, the annual Academy lecture, "Responsibilities of the D.O.," by Dr. Paul E. Kimberly, St. Petersburg, Florida, followed by "Differential Diagnosis in the Cervical and Upper Thoracic Area" by Dr. Allan A. Eggleston, Montreal, Quebec, Canada, and four teaching sessions.

Dr. Stephen M. Pugh, Everett, Washington, was installed as Academy president. Chosen president-elect was Dr. R. McFarlane Tilley, Kirksville. Continuing as secretary and treasurer respectively were Dr. Margaret W. Barnes, Carmel, California, and Dr. Omar C. Latimer, New Milford, Connecticut. Dr. Arthur E. Borchardt, Sunnyside, Washington, was named 1961 program chairman, succeeding Dr. Douglas F. Lauder, London, Ontario, Canada, who arranged this year's events.

The Academy awarded the Andrew Taylor Still Medallion of Honor to Dr. Phil R. Russell, Fort Worth, Texas. Honorary Life Membership awards were made to Dr. Paul K. Theobald, Oakland, California, Dr. Evelyn R. Bush, Westport, Connecticut, and Dr. Frank Chatfield Farmer, Hollywood, California.

The Keynote speaker of the 1959 A.O.A. Convention, Irvin M. Korr, Ph.D., Kirksville, delivered the William Garner Sutherland Memorial Address at the Academy's closing banquet Saturday night.

The American Association of Osteopathic Colleges met on July 15 and 16. President Joseph M. Peach, Kansas City College of Osteopathy and Surgery, was elected president, succeeding President Frederic H. Barth, Philadelphia College of Osteopathy. Dr. Richard N. MacBain, president of Chicago College of Osteopathy, was chosen vice president. Dr. J. S. Denslow, Kirksville, continues as secretary-treasurer. In a letter to U.S. Surgeon General Leroy E. Burney, the A.A.O.C. expressed the intent to "make every effort to implement the recommendations of your consultant group on medical education." This group in its report last fall called for an increase in health education facilities in order to graduate three doctors in 1975 for every two trained today.

The American College of General Practitioners in Osteopathic Medicine and Surgery selected a rural physician of eastern Pennsylvania to receive its annual award as general practitioner of the year, presented at the Inaugural Banquet by the "G.P.'s" president, Dr. Richard O. Brennan, Houston, Texas, to Dr. Whitlaw M. Show, Bird-in-Hand, Pennsylvania. The "G.P.'s" held meetings of their board of governors and their executive board at the Convention, also a breakfast meeting and a past presidents' council meeting.

American Osteopathic Golf Association honors for the year were won by Dr. Wilbur A. Craig, Mountain Grove, Missouri. Runners-up were Dr. Everett E. Harris, Kansas City, and Dr. J. Vincent Murphy, Grand Blanc, Michigan, who were then elected president and secretary-treasurer respectively of the Association, succeeding Dr. George W. Ringland, Cape Girardeau, Missouri, and Dr. Arthur S. Cudmore, Boise, Idaho. The 1960 program chairman was Dr. Harold J. McAnally, Kansas City, and the site of operations was the Hillcrest Country Club.

The American Osteopathic Historical Society held its annual luncheon and business meeting July 20. With Dr. Charles D. Ogilvie, Dallas, Texas, presiding, the members were edified by a discourse on "The Creativity of A. T. Still," delivered by Mr. Sheldon W. Samuels, Chicago, a distinguished scholar in the history and philosophy of the human sciences, who is engaged in writing a book with the title "Osteopathy: An American School of Medicine" to be published by Oceana Publications.

At the business session, Dr. Ogilvie was re-elected as president and Miss Josephine Seyl, Chicago, secretary-treasurer. Dr. Munish Feinberg, Los Angeles, was elected to the vice presidency.

The Association of Osteopathic Publications announced the sponsorship of an annual Raymond P. Keesecker Memorial Award, to the author of the article adjudged the best of the year published in THE JOURNAL OF THE AMERICAN OSTEOPATHIC ASSOCIATION. Miss Josephine Seyl arranged an excellent program for the luncheon and meeting in conjunction with the Society of Divisional Secretaries July 16 in the Tea Room. Paul Fisher, Jr., Ph.D., professor of the University of Missouri School of Journalism, discussed the publications submitted to him for analysis by A.O.P. members.

Dr. C. Fred Peckham, Oswego, New York, was elected to the presidency to succeed Dr. Phil R. Russell, Fort Worth, Texas. Mr. Floyde E. Brooker, Highland Park, Michigan, executive secretary of the Michigan Association of Osteopathic Physicians and Surgeons, assumed the vice presidency. Miss Seyl was re-elected secretary-treasurer.

Dr. Russell moved into the presidency of the Society of Divisional Secretaries. As his vice president the society elected Mr. Barton K. Johns, Tampa, Florida, executive director of the Florida Osteopathic Medical Association. The vice presidency includes the program chairmanship of the 1961 meeting. The secretary-treasurer office passed to Mr. Thomas M. Fogarty, Harrisburg, Pennsylvania, executive secretary of the Pennsylvania Osteopathic Association. An honorary life membership was given to the society's immediate past president, Mr. Thomas C. Schumacher, retired executive secretary of the California Osteopathic Association.

At its July 18 breakfast meeting the Gavel Club, organization of A.O.A. past presidents, installed Dr. Vincent P. Carroll, Laguna Beach, California, as president succeeding Dr. H. Dale Pearson, Erie, Pennsylvania. Dr. Robert B. Thomas, Huntington,

West Virginia, continues as secretary-treasurer. The meeting was addressed by Dr. Donald R. Dilworth, Riobamba, Ecuador.

The officers of the National Board of Examiners for Osteopathic Physicians and Surgeons were all returned to office in the course of meetings July 16 and 17, Dr. S. V. Robuck, Chicago, as president, Dr. Spencer G. Bradford, Philadelphia, vice president, and Dr. Paul van B. Allen, Indianapolis, secretary-treasurer.

Dr. Wesley B. Larsen, Chicago, succeeded Dr. Robuck in the presidency of the American Osteopathic Foundation, of which Dr. True B. Eveleth, A.O.A. Executive Director, is secretary.

The Auxiliary

Largest of the A.O.A. affiliates, and in some areas the most influential, the Auxiliary enrolls a membership of some 3,800 women. Its influence is particularly effective in the fields of education, public relations, and fund raising. Each year its annual convention concurrent with that of the A.O.A. provides an inspiring pattern of harmonious and forward-pointing cooperation.

The Auxiliary is represented on the A.O.A.'s Council on Development and on its Osteopathic Progress Fund committee. It is assuming the administration of the annual Christmas seal campaign in 1961. Its student loan and research activities play a major role in education. For the coming year the immediate past president, Mrs. George W. Northup, Livingston, New Jersey, is chairman of the student loan and research committee and is co-chairman with Mrs. Wesley B. Larsen, Chicago, of the Christmas seal committee.

Through its own allied organization, the National Osteopathic Guild Association, the Auxiliary strengthens and extends the service of nonprofessional women in osteopathic hospitals. The annual report of the Auxiliary president, Mrs. Northup, to the A.O.A. Board of Trustees and House of Delegates gave impressive evidence of progress and achievement.

The program for the twentieth annual convention in Kansas City represented splendid planning and administration by the convention committee headed by Mrs. L. A. Marohn, Elkhart, Indiana, with Mrs. D. W. Streitenberger the local chairman. Mrs. J. M. Moore, Jr., Trenton, Tennessee, was Mrs. Marohn's able adjutant chairman. Facilities chairman was Mrs. Harold J. McAnally, and the social side was managed by Mrs. F. W. Thompson and Mrs. Eugene P. Wise, all of Kansas City. The host city's Mrs. John C. Taylor was committee treasurer, and its Mrs. Lee E. Davidson and Mrs. John A. Greaves had charge of special events.

The Hotel Phillips, just across the street from the Muehlebach, was official A.A.O.A. convention headquarters. Meetings of its board, house of delegates, and committees, its symposium on "Osteopathic Colleges," and its elections were held at the Phillips. The A.A.O.A. joined forces with the A.O.A. in the major social events of the Convention, the Presidential Banquet, the A. T. Still Memorial Luncheon, the Inaugural Banquet and Ball, and the Informal Tea and Reception for Women Guests on Wednesday. Its Installation Lunch and Entertainment Thursday took over the Muehlebach's Colonial Room.

The installation presented Mrs. Campbell A. Ward, Mt. Clemens, Michigan, as the new president and, as president-elect, Mrs. William B. Strong, Des Moines. Vice presidents installed were Mrs. Richard O. Brennan, Houston, Texas, and Mrs. Marion Edmund Coy, Jackson, Tennessee. Mrs. George F. Marjan, Palos Heights, Illinois, continues as recording secretary. Mrs. Richard N. Sheppard, North Olmsted, Ohio, was installed as treasurer. Mrs. Otterbein Dressler, Detroit, continues as editor. Dr. George W. Northup, Livingston, New Jersey, succeeds Dr. Carl E. Morrison, St. Cloud, Minnesota, as Auxiliary Advisor. New directors elected for 3 years are Mrs. V. L. Sharp, Milwaukee, and Mrs. Joseph W. Kenney, Indianapolis; director for 2 years, Mrs. James F. Routsong, Tulsa, Oklahoma; and for 1 year, Mrs. Larsen.

Having increased the A.A.O.A. annual scholarship program from seven to ten scholarships a year ago, the Auxiliary gave the program an even more substantial raise this year from ten to twelve, increasing the amount of each award from $1,000 to $1,500. Mrs. E. G. Nigh, McPherson, Kansas, was appointed chairman of this year's scholarship committee.

Mrs. Frances E. Warner, Bloomington, Indiana, takes the post of student wives counselor. Mrs. William Baldwin, Jr., York, Pennsylvania, was appointed historian. Mrs. Clair E. Pike, Long Beach, California, was appointed chairman of the editorial advisory committee. Mrs. Sharp heads the Osteopathic Progress Fund committee. Mrs. Carl R. Samuels, Pryor, Oklahoma, will chair the committee on allied organizations. The roll call of committee chairmen lists Mrs. Clifford W. Millard, Hillsdale, Michigan, heading the 1961 convention committee; Mrs. Strong, membership; Mrs. Coy, program; Mrs. Routsong, press and radio; Mrs. Brennan, finance and public relations; Mrs. Gervase C. Flick, Cleveland, public health, and Mrs. Kenney, by-laws.

The five members elected to the 1961 nominating committee are Mrs. Northup, Mrs. Larsen, Mrs. Flick, Mrs. Wiley B. Rountree, San Angelo, Texas, and Mrs. Munroe H. Kneeland, Liberal, Missouri.

The colorful climax to the Auxiliary entertainment program carried a gay-costumed cast to the Municipal Auditorium July 21 to present a documentary play for the A.O.A. conventioners, "Fact or Fantasy," by Irene Pyle Millar, a courtroom scene with its thirty-seven dramatis personae performing the histrionic roles.

Alumni reunions

Wednesday was Alumni Day, with reunions, business meetings, and elections. Kirksville extended its alumni activities over 4 days, with an alumni room open all day and evening, Monday through Thursday, and house of delegates continental breakfasts in the Colonial Room Tuesday and Wednesday, followed by meetings until 10 a.m.

On Alumni Day president Dr. Alma C. Webb,

Akron, Ohio, and Mr. Lewis F. Chapman, executive secretary of the K.C.O.S. Alumni Association, arranged a reception from 6 to 7 in the Junior Ballroom, preceding the annual dinner in the Colonial Room. The officers elected were Dr. Paul E. Wilson, Ocala, Florida, to the presidency, first vice president, Dr. Marion Edmund Coy, Jackson, Tennessee, and second vice president, Dr. Louise W. Astell, Champaign, Illinois. Mr. Chapman continues as executive secretary and Mr. Louis W. Handley, Kirksville, as treasurer.

The Association voted honorary membership to Kansas City's Mayor, the Honorable H. Roe Bartle, and to other members of the K.C.O.S. board of trustees.

Dr. W. B. Carnegie, Rocky River, Ohio, took the chair as president of the Chicago College of Osteopathy Alumni Association at the dinner held at the Famous Restaurant. Vice president is Dr. Wallace S. Willman, Traverse City, Michigan. Dr. Ward E. Perrin, Chicago, continues as secretary-treasurer.

The C.C.O.A.A. voted a grant of $1,000 to the College for research equipment and honored Dr. Irene J. Biddle, '05, Glendale, California, oldest living graduate, and Dr. Floriene A. Mauer, '18, Evanston, Illinois.

Des Moines alumni met at breakfast and at dinner on Alumni Day. Dr. W. Clemens Andreen, Wyandotte, Michigan, moved to the presidency. Dr. O. O. Wentling, Erie, Pennsylvania, was elected vice president and Dr. J. R. Forbes, Phoenix, Arizona, president-elect. Mr. Wendell R. Fuller, Des Moines, continues as executive secretary.

The alumni house of delegates nominated Dr. Dale Dodson, Northfield, Minnesota, as alumni representative on the board of trustees of the College of Osteopathic Medicine and Surgery at Des Moines. Recognition was made of the contributions by the alumni's 500, 350 and 250 clubs.

The Kansas City College alumni gathering in the Pioneer Room of the Hotel Phillips was entirely a social reunion with good fellowship the only order of business. The officers elected for the year at the April business meeting of the alumni association in connection with the National Osteopathic Child Health Conference and Clinic are: president, Dr. H. Vard Nelson, Kansas City; vice president, Dr. S. Riley King, Overland Park, Kansas; president-elect, Dr. V. L. Jennings, Fort Worth, Texas; executive secretary-treasurer, Dr. Harold W. Witt, Kansas City.

Philadelphia College of Osteopathy held its alumni reception from 5 to 6 in the Muehlebach. Secretary Robert D. Anderson announced the officers for the year: Dr. George S. Rothmeyer, St. Petersburg, Florida, president; Dr. George B. Stineman, Harrisburg, Pennsylvania, vice president; Dr. Boyd B. Button, Portland, Maine, president-elect; Dr. Charles A. Hemmer, Lansdowne, Pennsylvania, treasurer.

Fraternities and sororities

National officers were announced by the fraternities and sororities as the result of elections at their Convention meetings.

Alpha Tau Sigma chose Dr. Marion Edmund Coy, Jackson, Tennessee, as president, Dr. Vincent P. Carroll, Laguna Beach, California, vice president, and Dr. R. H. Peterson, Wichita Falls, Texas, secretary-treasurer.

Dr. Philip E. Haviland, Detroit, was installed as grand noble skull of the Atlas Club. Grand occipital is Dr. Allan A. Eggleston, Montreal. Dr. C. R. Starks, Denver, was elected grand stylus and receptaculum.

Axis elected Dr. Marjorie Olwen Gutensohn, Kirksville, as president, with Dr. Pattie J. Bricker, Houston, Texas, vice president, Dr. Lydia Tueckes Jordan, Davenport, Iowa, secretary, and Dr. Mary Lou Logan, Dallas, Texas, treasurer.

The annual sorority dinner in the Driftwood Room at the Hotel Phillips was featured by the allocation of $350 to provide a 16 mm. sound camera for Dr. Esther Smoot, Kansas City College of Osteopathy and Surgery, to use in the structural department. Axis also voted $100 to the Student Loan Fund of the National Osteopathic Foundation.

Delta Omega's Grand Chapter met in the Crystal Room at the Phillips, announcing the growth of the sorority in the reactivation of the Gamma chapter at the College of Osteopathic Physicians and Surgeons, making a grand roll call of five active chapters. Dr. Rosamond Pocock, Toronto, presented a certificate of reactivation to Dr. Betsy B. MacCracken, of the C.O.P.S. faculty. Gamma had been inactive since 1935.

Grand Chapter officers elected are: Dr. Pocock, president; vice president, Dr. R. Eleanor Sterett Roberts, Queen City, Missouri; secretary, Dr. Josephine Insley Worley, Kansas City; treasurer, Dr. Roberta E. Mies, Pontiac, Illinois; historian, Dr. Betty H. Slaughter, Lexington, Missouri; escort, Dr. Sara W. Wheeler, Duluth, Minnesota; guard, Dr. Gemma Ferrari, Mishawaka, Indiana; and Dr. Margaret H. Raffa, Tampa, Florida, editor.

Research projects, student recruitment, the Osteopathic Progress Fund, and providing financial help to women students are among Delta Omega's objectives for the year ahead.

Iota Tau Sigma's new president is Dr. James F. Gipe, Kirksville, vice president, Dr. Herbert Templeman, Oxnard, California, executive secretary-treasurer, Dr. Wilson P. Bailey, Kirksville, secretary, Dr. A. Leon Sikkenga, Orlando, Florida, historian, Dr. L. A. Marohn, Elkhart, Indiana, and editor, Dr. James J. Woodruff, Bay Village, Ohio. Supreme past president Dr. A. L. Durdan, Macon, Missouri, was presented with a certificate of honor at the Tuesday banquet.

Dr. Robert C. Fulford, Cincinnati, Ohio, was elected president of Psi Sigma Alpha, with his first vice president Dr. Raymond A. Gadowski, Detroit, second vice president Dr. James A. Keller, Kirksville, and executive secretary-treasurer Dr. John W. Hayes, East Liverpool, Ohio.

Phi Sigma Gamma's largest meeting in 12 years was held at the Hotel Continental. Installed as grand archon was Dr. Harold W. Witt, Kansas City, and

grand sub archon, Dr. J. Vincent Murphy, Grand Blanc, Michigan. Dr. Wilbur P. Lutz, Philadelphia, was named grand exastase. Executive secretary Dr. Stan J. Sulkowski, Kansas City, was re-elected and Dr. John A. Schuck, Los Angeles, was elected editor. A plaque was presented to the retiring grand archon, Dr. John Q. A. Mattern, Des Moines.

Sigma Sigma Phi's new officers are Dr. K. Grosvenor Bailey, Los Angeles, president, and Dr. Burton E. Poundstone, Des Moines, vice president. Perennial secretary-treasurer Dr. S. V. Robuck was again re-elected. Honorary memberships were bestowed on Irvin M. Korr, Ph.D., Kirksville, Merlyn McLaughlin, Ph.D., president of the College of Osteopathic Medicine and Surgery, Des Moines, and Dr. William W. W. Pritchard, Pasadena, California.

Sigma Sigma Phi held its meeting July 17. The other fraternities observed the traditional Tuesday evening scheduling of their national gatherings.

Exhibits

The Municipal Auditorium Arena was the stage for both the scientific and commercial exhibits. Dr. Wilbur V. Cole, Kansas City, continued his distinguished chairmanship of the scientific section. Mr. Walter A. Suberg, A.O.A. Business Manager, directed the commercial displays which were visited by the conventioners daily, Monday through Thursday, from 9 to 5, presenting a diversified group of exhibitors offering the latest advances in drugs, equipment, and services.

Awards were made to six of the twenty-seven scientific exhibits, which collectively were the best in quality in the history of the A.O.A. Convention's science exhibit programing. In the professional research category, the award went to "Visual Aids in the Study of Esophageal Neoplasms," presented by Dr. David Silverman, Philadelphia.

In the basic research category, the winner was "Fluorescence Microscopy of Nerve and Cervical Exfoliate Cytology," presented by Dr. J. Eugene Mielcarek, Kansas City College of Osteopathy and Surgery.

Honors among the institutional exhibits were taken by "Air Pollution Is a National Problem," presented by Mr. Gerald W. Ferguson, Air Pollution Program, Regional Office, Department of Health, Education, and Welfare, Public Health Service, Washington, D.C.

"Electronic Instrumentation in Basic Science," presented by Dr. Robert A. Kistner, Dr. Albert F. Kelso, Mr. Gary Schirs, Mr. Robert Malinowski, and Mr. Edward McGovern, all of the Department of Physiology, Chicago College of Osteopathy, was the winner among the "application of research to clinical matters" exhibits.

The "Anatomical Exhibit" of Dr. Angus G. Cathie, professor of anatomy at Philadelphia College of Osteopathy, won the palm in the "application of anatomy to clinic" division.

The presentation of Dr. Myron S. Magen and Mr. E. L. Baldwin, Des Moines, "The Normal Newborn—the Abnormal Newborn" carried off top honors in its category, "clinical teaching."

Reports

The meetings of the Board of Trustees and the House of Delegates, in which elected representatives direct the Association's policies and effect legislation, have always been a vital part of the annual Convention. Next year the House will meet in July. With the general Convention scheduled for January, there can be interim consideration at that time of the matters which are regularly summed up in annual reports of bureaus and committees for deliberation and action at the midsummer legislative sessions.

Part of the summarization of official action at the Kansas City Convention and some of the condensed reports of chairmen submitted to Board and House appear in "A.O.A. Activities" (page 33), the section of THE JOURNAL initiated in December 1957, to carry a month-by-month, year-by-year accounting of the Association as a national administrative and executive body. The remaining summaries and condensed reports will appear in early issues.

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A.O.A. ACTIVITIES

A statesman retires

▶ Members of the House of Delegates of the American Osteopathic Association rose to their feet, late in an afternoon session at Kansas City in July, as Dr. Chester D. Swope made his way to the podium. They listened gravely as he announced his retirement as chairman of the Council on Federal Health Programs. When he finished his simple pronouncement, again they stood, in tribute and affection.

This portrait of Dr. Swope hangs in the Board Room in the Association's Central Office in Chicago.

Thus an elder statesman formally ended half a century of public service, to be able at long last to devote full time to his practice.

Almost from the time Chester Swope began practice in Washington in 1910, he shared his office time between his patients and his service to the profession. By 1914 he was a trustee of the National Association. He was a member of its House of Delegates from its founding in 1920, its President in 1924, and in 1930 was made chairman of its new Department of Public Relations (now the Council on Federal Health Programs). In that assignment he has, for 31 years, played his part in establishing the relationship between government and osteopathy.

For his achievements he is held in honor by his own. They have given him their highest award, a Certificate of Distinguished Service; made him a fellow in the association of their surgeons; conferred on him honorary degrees from three of their colleges; named him an A. T. Still Memorial Lecturer. Two years ago, when the A.O.A. met in his beloved Washington, he was acclaimed General Practitioner of the Year.

This is perhaps his most dearly held honor, and his most definitive one. For Chester Swope has held himself always as a general practice physician. He has been a statesman only to help clear the way for his fellow D.O.'s to be complete physicians. Now, in love and gratitude, his profession says farewell to the statesman, that the physician may come into his own.

"American Doctor"—A.O.A. film soon to be released

► Millions of Americans will see the story of osteopathy on their television screens this fall when the new A.O.A. picture, "American Doctor," is released nationally. In production since last February, the 28½-minute color film features an all-Hollywood cast headed by Donald Woods as Andrew Taylor Still.

The film is being made by Roland Reed Productions of Hollywood. Robert A. Klobnak, director of the A.O.A. Division of Public and Professional Service, is serving as technical adviser, acting with the A.O.A. film control committee of which Dr. Ira C. Rumney, Ann Arbor, Michigan, is chairman, and Drs. Galen S. Young, Chester, Pennsylvania, and Wallace M. Pearson, Kirksville, Missouri, are members.

Norman Reilly Raine writes script • The script for the motion picture was written by Norman Reilly Raine, who won an "oscar" for his screenplay, "The Life of Emile Zola," and who created the character Tugboat Annie. Arthur Pierson, a protégé of Cecil B. DeMille and Otto Preminger, was the film's director.

"American Doctor" is the story of osteopathy's birth, its phenomenal growth, and its promising future. The film traces the growth of medicine through the centuries, and establishes osteopathy as a part of the continuing development of the healing arts. Flashbacks depict the contributions of Hippocrates, Andreas Vesalius, and Thomas Sydenham.

The film tells the story of Dr. Still's boyhood, his study of medicine under his father, and his army service. It pictures the opening of the college in Kirksville and, in the graduation of its first class, the establishment of the osteopathic profession.

There the film ends its journey into the past, and concentrates on modern osteopathy. It treats of osteopathic education today, and the role of the doctor of osteopathy in the national community. It explores possibilities of the future.

Filmed in three states • The story was filmed in Hollywood and the San Fernando Valley in California, in the Detroit Osteopathic Hospital in Michigan, and in the Kirksville College of Osteopathy and Surgery in Missouri. Shooting began on July 5, when a caravan of vehicles headed north on the Ventura Freeway for Topanga Canyon in the Valley. Some forty actors, cameramen, sound technicians, lighting experts, make-up specialists, and wardrobe men made the trip.

After 2 days of shooting on the Iverson ranch, where many TV westerns are filmed, the crew returned to Hollywood to film more than a dozen scenes on carefully authenticated period sets. Of particular interest to osteopathic viewers will be scenes from the early years of Dr. Still.

Director Pierson and his six-man crew spent the latter part of July at the Detroit Hospital and the Kirksville College. The Detroit pictures include a ward walk, the administration of radiation therapy, a nursery in action, surgical and resident training procedures, and patient care.

The story of osteopathic education was shot in Kirksville. Several thousand feet of film were devoted to a description of the basic science and clinical training of an osteopathic student. College officers, staff, and faculty members provided technical advice.

The shooting completed, the footage was pieced together first into a continuity print, and then into the work print that is being viewed in New York this month by A.O.A. Executive Director True B. Eveleth and Mr. Klobnak. When revisions have been made, the print will be returned to Hollywood for final narration corrections, musical score, color density, credits, and titles.

To be released this fall • Eighty 16 mm. prints of the film are scheduled for release this fall, according to Mr. Klobnak. Half of them are to be in black and white for show-

On the set—Director Arthur Pierson, Actor Donald Woods, who plays the role of Andrew Taylor Still, and Technical Advisor Robert A. Klobnak, of Central Office staff, look over script of film in Hollywood studio.

ing on television, half in full color for showing at public service and organizational meetings, and in schools, libraries, and service clubs.

"We anticipate more than 300 public service telecasts in the first year," said Mr. Klobnak. "With an average of 30,000 viewers for each showing, we estimate that the film will reach more than 9,000,000 Americans in its first twelve months."

To be available to profession • "American Doctor" is to be made available to the profession on a loan basis or through purchase. The release date and the cost of the prints will be announced soon. The Division also plans to make an abbreviated version of about 13 minutes' running time, to be used as a short subject in motion picture theaters.

Although production time, from the writing of the script to the finished picture, adds up to only 9 months, the story of the production goes back to July of last year.

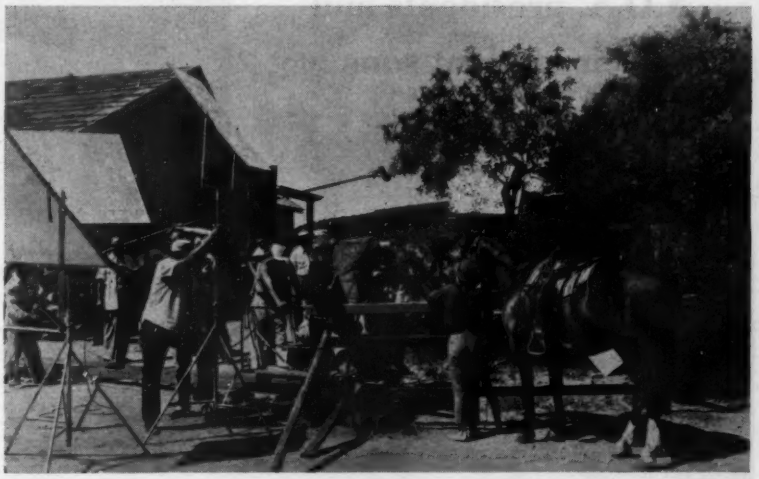
In his annual report to the Board and House at that time, Mr. Klobnak recommended the production of a new motion picture. Films previously made, he pointed out, were reaching the end of their usefulness. For efficiency, he recommended that a picture plan be developed to determine the most effective way to tell the osteopathic story.

Film Counselors, Inc., of New York City, had such a picture plan ready for showing at the January meeting of the Board. Funds were allocated for production, which includes film consultation fees, release prints, and distribution for 1 year. The film control committee was also appointed.

For the next 2 months, Mr. Klobnak showed the film plan to more than 500 individuals throughout the Middle West for reactions and suggestions. They included lay people, doctors, osteopathic college students, and faculty members. More than 90 per cent of them rated the film as good or excellent. Many of them made suggestions that were incorporated into the final script.

"We feel," said Mr. Klobnak, "that the year's work, many hours of it by the committee and staff, has produced a well-planned, thoroughly tested motion picture that will tell the osteopathic story with authority and quality."

First day on location—Crew and actors at the Iverson ranch in California's San Fernando Valley, where outdoor scenes for "American Doctor" were taken. Many TV westerns are filmed on this ranch.



About "American Doctor"—

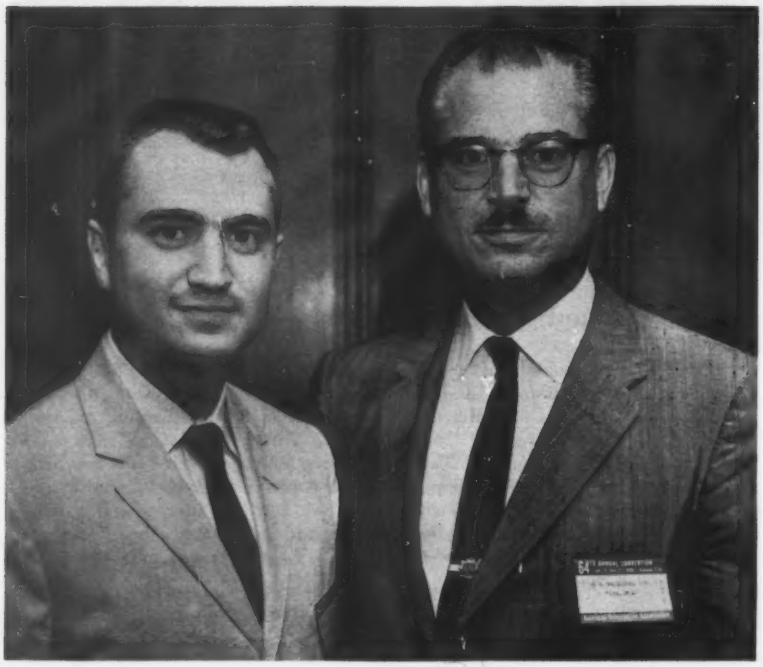
Members of the cast: Donald Woods, as Andrew Taylor Still ("Watch on the Rhine," "Bridge of San Luis Rey," "Wagon Train," "U.S. Steel Hour"); Craig Marshall as young Still; Richard Cutting as Abram Still ("Maverick," "Have Gun, Will Travel," "Gunsmoke"); Iron Eyes Cody, as injured Shawnee; Lewis Martin, as Dr. William Smith; House Peters as Hippocrates; Jan Arvan as Andreas Vesalius.

Writer: Norman Reilly Raine, creator of "Tugboat Annie," author of screen plays, "Life of Emile Zola," "Elizabeth and Essex," and "China Clipper."

Director: Arthur Pierson, protégé of Cecil B. De Mille and Otto Preminger.

An early run—Director Pierson and Mr. Klobnak, with cameramen and crew, study a day's filming.

A.O.A. presidents and their student sons



► In Kansas City in July, the President and three Past Presidents of the Association shared a gratifying circumstance. President Galen S. Young, Drs. Robert D. McCullough, President in 1956-57, Vincent P. Carroll, in 1950-51, and R. McFarlane Tilley, in 1942-43, all had as Convention companions sons who are preparing themselves to be osteopathic physicians.

Dr. Young's son, Galen, has just entered his third year of preosteopathic work at Elizabethtown College, Elizabethtown, Pennsylvania.

Robert D. McCullough II is in his third year at the Kansas City College of Osteopathy and Surgery, and holds a bachelor's degree from Wheaton College, Wheaton, Illinois.

Vincent P. Carroll II is a junior at the College of Osteopathic Physicians and Surgeons, Los Angeles. He received his baccalaureate degree from the University of Notre Dame in 1958. His infant son is Vincent Patrick III.

Jon Peter Tilley holds a B.A. degree from Haverford College, Haverford, Pennsylvania, and is now a junior at the Kirksville College of Osteopathy and Surgery, where his father is dean.

Convention attendants—
Above, President Galen S. Young and his son, Galen, who is in preosteopathic study at Elizabethtown College.

Above, left, Robert D. McCullough II, a junior at Kansas City College, and Dr. McCullough, 1956-57 A.O.A. President.

Left, Vincent P. Carroll II, a junior at the Los Angeles College, and his father, A.O.A. President in 1950-51.

House and Board in 1960

▶ As in the past, an integral part of this year's National Convention was the transaction of Association business by the House of Delegates and the Board of Trustees. Meeting as a part of the general convention, held last month in Kansas City, the two governing bodies heard the annual reports of the chairmen of A.O.A. departments, bureaus, and committees, acted upon matters of policy and procedure, elected new officers and trustees, ratified presidential and other appointments, and gave attention to special orders of business.

Condensations of the annual reports will appear in this and subsequent issues of THE JOURNAL, in the A.O.A. Activities section. In this issue are reports of administrative officers excepting that of the Treasurer, which is available upon request, of other members of Central Office staff, and of the chairmen of ad hoc committees. Reports of the Departments of Professional and Public Affairs and the Council on Development will appear in October and November. All reflect the responsibility and judgment of the Association's governing bodies and their committees.

Here are highlights from the sessions of the House and Board of 1960:

Membership • The Association gained 342 members this year, to bring its total to 10,867, highest in A.O.A. history. Distinguished Service Certificates were granted to Dr. Alexander Levitt, Brooklyn, for service in osteopathic education and organization; Dr. J. Paul Leonard, Detroit, in hospital development; and Dr. Stephen B. Gibbs, Coral Gables, Florida, in professional service. Honorary life memberships were conferred on twenty-four doctors. A committee was established under the Bureau of Insurance to study professional retirement plans.

Colleges and hospitals • Signal progress marked reports of agencies concerned with the revision of the profession's educational processes. The Board approved the certification of sixty-six candidates from eleven specialty boards, approved four hospitals for intern and residency training, and added nine to the list of registered hospitals. It directed that the Hospital Intern Matching Plan be continued, and that specialty colleges work with the Committee on Hospitals in an evaluation of inspection and residency training programs. It approved employment of additional personnel in the A.O.A. Office of Education. It directed that theses suitable for publication be a requirement of specialty certification, and that a $3,000 budgetary allocation be made for instruction in manuscript writing in the six colleges.

Research • Grants for specific research programs were approved for 1960-61 in a total of some $100,000. Also approved was the establishment by the National Osteopathic Foundation of a fund to be used in support of career investigators in research.

1961 Convention • In a departure from precedent, the 1961 Convention will be held in January, the

Dr. Charles W. Sauter, II, right, receives a watch from members of the House of Delegates to mark his fifteenth year as Speaker. Left, Dr. Arnold Melnick of the Pennsylvania delegation, makes the presentation.

23rd through the 26th, in Miami Beach, Florida. Physical fitness will be its theme. Dr. Ward E. Perrin, Chicago, has been named as Program Chairman, and Dr. Hobert C. Moore, Bay City Michigan, A.O.A. Past President, as the A. T. Still Memorial Lecturer. For the first time since it was established in 1920, the House of Delegates will not hold its annual meeting as part of the annual convention, but will continue to meet during the summer in Chicago. The Board will hold its annual meeting at the same time, and will hold its midyear meeting in conjunction with the annual convention.

Herbert E. Evans, center, chairman of the Board of Directors of the National Osteopathic Foundation, following his address to a joint session of the House and Board. Right, Dr. Wilbur V. Cole, of the Kansas City College, and left, Mortimer T. Enright, A.O.A. staff.

Health Care and Medical Services • The Board set up an ad hoc Committee on Disaster Medical Care, with Dr. Raymond W. Hanna, Kansas City, Missouri, as chairman. He is to be assisted by eight regional chairmen. The House and Board also requested that a conference on medical care plans be held in Chicago soon, and that divisional societies be invited to send representatives. It directed that a National Committee on Health Care for the Aging be appointed under the Bureau of Public and Industrial Health. It adopted a resolution recognizing the health problems of the aging, and pledged the cooperation of the American Osteopathic Association with government and private agencies working to meet this problem.

Special Order of Business • Mr. Herbert E. Evans, Columbus, Ohio, chairman of the Board of Directors of the National Osteopathic Foundation, and Dr. Carroll P. Hungate, Kansas City, Missouri, consultant to the Public Health Service and chairman of the A.M.A. Committee on Disaster Medical Care, addressed the House, each in a special order of business.

Mr. Evans, who is president of the People's Broadcasting Company, Columbus, commended the profession for its support of its educational institutions, and its responsibility in matters of public health. He called for dedication and hard work in both fields to meet the challenges ahead. Dr. Hungate urged A.O.A. support of federal appropriations for the mobilization of personnel and programs to promote civil defense.

Amendments • In amendments to the Constitution and By-Laws, the title of Executive Secretary was changed to Executive Director; the annual meetings of the House of Delegates and Board of Trustees were separated from the annual convention or clinical assembly; the name of THE FORUM was changed to D.O.; honorary life memberships may now be granted only to members who have given outstanding service at either the state or national level.

At the President's Banquet and Ball—Members of the House and Board relax at the first big social event of the Convention. At the head tables are A.O.A. Officers and Trustees. More than 1,000 members and guests attended the banquet.

Digests of Annual Reports—Central Office—Ad Hoc Committees

Irue B. Eveleth, D.O.
Executive Director

Report of the Executive Director

▶ During the past 12 months, many "firsts" have occurred in this profession. The combined efforts of the various functioning units of organized osteopathy have resulted in substantial progress in the development program. Obviously, much of the spadework which resulted in these advances dates back over the years.

In July 1959, the A.O.A. House of Delegates adopted a statement of policy which indicated a determination to continue the osteopathic school of practice, thus dispelling the confusion in the mind of philanthropy as to whether or not osteopathic education was a suitable recipient of support.

Grants • The Rockefeller Brothers Fund has granted one-half million dollars to osteopathic education. Mrs. John D. Rockefeller, Jr., has given another half million dollars in support of a professorship in osteopathic principles and theory at the Kirksville College of Osteopathy and Surgery. A bequest estimated to be three and one-half million dollars was made during the year for the purpose of endowing research in the field of osteopathic theory and practice.

Other grants in support of osteopathic education, but not specifically earmarked in support of developing the principles of osteopathy, were $34,500 from pharmaceutical companies; $40,000 to the Kirksville College from an anonymous source; and a million dollars from the Commonwealth of Pennsylvania to the Philadelphia College of Osteopathy for hospital construction. The latter is in addition to the biennial grant of $200,000 from the Commonwealth for general expenses of the College. The College of Osteopathic Physicians and Surgeons, Los Angeles, received a federal grant of $99,750 for research facilities, and the Chicago College of Osteopathy received $5,548 for this purpose. The Kirksville College has been granted a loan of $570,000 for construction of student housing.

Osteopathic Progress Fund • The Osteopathic Progress Fund Committee reports $728,733 from professional giving and $301,737 in public gifts. Both are all-time highs.

An amazing amount of money has been contributed to osteopathic hospitals. We do not know the total amount, but we do know that the expansion programs of osteopathic hospitals, with public and federal support, are phenomenal.

The Auxiliary to the American Osteopathic Association has increased to ten the number of its scholarships, each for $1,000.

The Christmas seal program, while falling slightly short of the all-time income record, did provide a greater net return than ever before for student loans and research.

Many smaller but none the less welcome gifts and contributions have been received from divisional societies, specialty colleges, fraternities, and individuals, earmarked for specified activities.

There are many other advances. *Life* is preparing an important article setting forth a factual story of the profession. It is expected that this will appear in the immediate future. The author of this article spent many weeks studying the various facets of the osteopathic school of medicine in order to produce a completely objective report. A book is being published on the osteopathic profession which also is an objective report on the importance of osteopathic medicine as it relates to health care in this country.

Governor Nelson Rockefeller of New York publicly stated, at a luncheon observing the fiftieth anniversary of the Osteopathic Society of the City of New York, that his personal physician for 20 years has been an osteopathic physician and that he is indebted to the osteopathic profession and particularly to his physician. The Governor commented on the importance of the service provided by osteopathy, as did Laurance Rockefeller in commenting on the Rockefeller gifts last month.

The Conference Committees of the A.O.A. and A.M.A. met for the first time in 6 years, thus providing

As President of the American Osteopathic Association, Dr. Roy J. Harvey is scheduled to attend these conventions and meetings:

Michigan Association of Osteopathic Physicians and Surgeons, Grand Rapids	October 3-5
Canadian Osteopathic Association, St. Marguerite Station, Quebec	October 6-8
Missouri Association of Osteopathic Physicians and Surgeons, St. Louis	October 12-14
New York State Osteopathic Society, Rochester	October 14-15
American Dental Association, Los Angeles	October 17-20
North Carolina Osteopathic Society, Asheville	October 27-29
Clinical Assembly, American College of Osteopathic Surgeons, Dallas	October 30-November 3

opportunities for discussion of better understanding and mutual approaches in the field of health care.

Three laymen of stature now serve on the Board of Directors of the National Osteopathic Foundation. The Chairman of that Board, Mr. Herbert E. Evans, president of Peoples Broadcasting Company, Columbus, Ohio, who has many other commitments, was recently elected President of the national Y.M.C.A. Mr. Earle R. MacLaughlin, an executive of the Dow Chemical Company, Midland, Michigan, serves as Vice Chairman, and Mr. William T. Brady, president of Corn Products Company, New York, as a member of the Board.

Advertising in THE JOURNAL has increased substantially during the year. This testifies to the importance of the osteopathic profession in the thinking of the drug industry, and to the acceptance of the profession generally.

The development program of the profession is getting off the ground, and I think we can document a statement that a new era in the life of the osteopathic school of medicine has opened, and that its future calls for the assumption of the responsibilities that go with the importance of its position.

Membership • A year ago I reported that the Association had gained 331 members during the previous year, making a total membership at that time of 10,525. This year the Association has gained 342 members, with a total count of 10,867. This gain in members, though small in some views, amounts to the average yearly output of four colleges. With a general attrition rate of about 200, it is most gratifying that the membership can increase as it has.

While a large percentage of our membership is located in ten states, we note considerable activity in some of the so-called smaller states which portrays a potential for a more significant future.

It is interesting to note that in the Christmas seal program report, Virginia, Louisiana, Hawaii, Utah, and Alabama are in the top ten states in average response per D.O. in Christmas seal returns, and that the ten states "having the greatest percentage of membership participation" in the program are Alabama, Virginia, Arkansas, New Hampshire, North Carolina, Vermont, and the District of Columbia; and that Louisiana, Virginia, Hawaii, Wyoming, Kentucky, and Utah are among the top ten states bringing in the greatest return per patient.

Also, Georgia, Louisiana, Maryland, Minnesota, Nebraska, North Carolina, and South Carolina have active legislative programs.

Association income • The total income of the Association for 1959-60 was greater, by $247,404, than the income of last year. However, our expenses increased by $223,441 so that our net gain on income over expenses, compared with the previous year, was only $23,963. Our two major sources of income, dues and advertising, increased considerably during the year. Costs of operating also increased.

Student enrollment and recruitment • Student enrollment in the 1959 entering class was lower than in the previous year by eleven students. This decrease in the over-all total is not in itself too serious, but points out the ever-increasing need for student recruitment efforts in the lively competition for the brilliant young men and women in the professions. This year marks the first occasion in which the American Association of Medical Colleges and the American Medical Association have publicly admitted their concern over the dwindling pool of applicants in spite of the growing number of new medical schools.

The report of the director of the Office of Education sets forth the vocational guidance program of the osteopathic profession. In general, the efforts of several divisional societies and colleges are commendable, and give evidence of a greater realization of the need for this important activity than in the past. It also points out that even greater effort must be brought to bear on this problem because of a small decrease in the number of acceptable applicants in the fall of 1959.

Mr. Mills, director of the Office of Education, visited thirty-five undergraduate colleges in eight states during the year, attended many public relations and guidance meetings as well as a number of national conventions on education. The importance of this area of the director's activities increases with each year, and requires consideration of his total assignment. The Bureau of Professional Education is recommending the establishment of a position which would relieve the director of some of the responsibilities to which he is now assigned.

Editorial Department • During the period we are without an editor, the editorial staff continues to carry out the activities of the department. Dr. William E. Brandt is assisting until an editor has been obtained. The Associate Editor will report for the department, pointing out some of the problems which will need the attention of the Board and other bodies. These matters are not new but remain unresolved.

The Associate Editor will report the need for JOURNAL material, some of which could become available if residents were required to prepare scientific papers suitable for publication as a part of their training programs. This suggestion was previously considered and set aside with the contention that the individual responsible for the training program would actually write the paper and that the trainee could only present plagiarisms. Further consideration, however, would indicate that the third-year resident should be able to make a useful presentation of some aspect of the specialty in which he is being trained, and that the preparation of a paper would be important to his training program. This would necessitate a requirement by the Committee on Hospitals and collaboration with the specialty colleges.

It is further being recommended that the A.O.A. provide personnel to the colleges to instruct students in the preparation of medical manuscripts. If this is found practical and the six colleges are to receive such service, a minimum budgetary allocation of $3,000 would be necessary. It is possible that enough interest in preparation of scientific papers could be generated with such a program that one of the basic problems of the editor could be reduced materially.

AOA-AOHA Reciprocal Membership Agreement • In January, the Board of Trustees considered a recommendation that the registration and approval of a hospital by the American Osteopathic Association be a requisite for membership in the American Osteopathic Hospital Association, and that A.O.H.A. membership be a requisite for approval or registration by the A.O.A. The Board approved the principle of the proposal, and directed that mechanisms to implement the requirement be studied by the Executive Director of the A.O.A. and the Executive Secretary of the A.O.H.A.

The American Osteopathic Hospital Association reports that there are some details which need further study and has requested that the matter be one for discussion at the fall meeting of the joint committee of the A.O.H.A. and the Committee of Hospitals of the A.O.A.

Because this Board of Trustees approved the proposal in principle, and because the A.O.H.A. may approve it in the fall, it is recommended that the A.O.A. Board approve the requirement if procedures are developed which are satisfactory to the Committee on Hospitals and the Executive Director in October.

Other Health Agencies • The National Health Council is attaining greater levels of importance each year. Our participation in the programs of the Council also increases. We can justifiably feel we are contributing to NHC activities.

There is an increasing number of invitations for A.O.A. representation at national and local meetings of various health-related agencies. The scope of activities in which we are invited to participate is so broad that it is difficult to select an individual whose organizational assignment fits the activity. Perhaps the most significant implication to be drawn from this is that we have increased in stature to the point where our responsibilities in public programs are developing faster than we had anticipated.

In May, a health mobilization course was held in Battle Creek, Michigan, with ten representatives of the osteopathic profession present. A similar meeting will be held in Minneapolis in September.

Civil Defense • There is much interest in civil defense at the present time. The United States Council on Civilian Defense, the U.S. Public Health Service, and the Office of Civil Defense Mobilization all approach this subject through different avenues. The American Medical Association, the American Dental Association, as well as the American College of Surgeons, are quite active in these programs, and it would appear that we should activate our Council on Emergency Medical Services so that it can be geared to this increased tempo.

Recommendations (approved) •

1. That the Board of Trustees approve the A.O.A.-A.O.H.A. reciprocal membership agreement if satisfactory procedures for its implementation are developed.
2. That a $3,000 budgetary item be allocated for instruction in manuscript writing.

Registration day—Members of the House of Delegates and others who registered by mail before the Convention line up on opening day for their badges and tickets to social affairs.

Walter A. Suberg
Business Manager

Report of the Business Manager

► Progress in the Business Department is best indicated by a listing of income and expense for the last 3 years. The income for which this Office is responsible comes from THE JOURNAL, THE FORUM, THE DIRECTORY, HEALTH, commercial exhibits at the National Convention, sales of literature, and various resale items. The accompanying table gives a 3-year listing of income and expense.

Journal and Forum • Income from the JOURNAL and FORUM shows a substantial increase, an indication that the promotional material sent out during the year has produced results. The new design and layout of the JOURNAL are being well accepted by pharmaceutical houses and their agencies. Letters from doctors also indicate acceptance of the new format and styling.

THE FORUM OF OSTEOPATHY this year showed the largest increase in advertising income in its history. The accompanying table shows its growth in the last 3 years. FORUM expense shows a considerable increase this year, due to an increased number of editorial and advertising pages. This year's page total was 910, that of last year, 618.

In January of this year the Board of Trustees approved this recommendation: "That the name of THE FORUM OF OSTEOPATHY be changed to D.O., A PUBLICATION FOR ALL PHYSICIANS AND SURGEONS, D.O. and that appropriate By-law changes be presented for action." It is believed that the change in name will help to promote this publication. Since the action by the Board in January, six new contracts from advertisers have been received.

Directory and Health • The 1960 YEARBOOK AND DIRECTORY OF OSTEOPATHIC PHYSICIANS was made more comprehensive this year than previously, thus adding to the number of pages.

Sales from HEALTH continue to go down and the findings of last year still hold. Less than 2.93 per cent of the A.O.A. membership and 2.23 per cent of the entire profession purchase the publication. An extensive promotional campaign put on last fall gained only 543 1-year and 160 3-year subscriptions.

Literature sales and exhibits • Income from literature, reprints, auto emblems, and treatment tables was about the same as for last year. In this area, comparisons of income and cost from year to year are difficult, because expense for various items is not evenly distributed. As an example, the CUMULATIVE INDEX TO THE JOURNAL OF THE A.O.A., just published, adds a sizable cost item to this year's literature expense, but it should continue to produce returns for some time.

Commercial exhibit income for the Kansas City Convention (not presented in the table) was $28,000, the highest in A.O.A. history.

The Central Office building seems to be in good condition. We are still having air-conditioning and heating problems, but it seems that the only way to correct them would be to replace the present equipment. This would be extremely costly and certainly impractical.

THREE-YEAR CHART OF INCOME AND EXPENSE

	1957-1958	1958-1959	1959-1960
THE JOURNAL			
Income: advertising	$373,914.00	$422,798.00	$590,165.25
Income: sales	2,857.10	3,036.38	3,370.07
Expense	(204,668.18)	(233,358.37)	(337,636.84)
THE FORUM			
Income: advertising	28,359.78	33,696.51	50,804.00
Income: sales	(incl. above)	138.61	189.77
Expense	(50,002.01)	(59,183.67)	(88,872.88)
THE DIRECTORY			
Income: advertising	6,820.00	6,543.30	6,900.00
Income: sales	3,576.32	4,023.55	17,658.60
Expense	(17,615.09)	(15,978.37)	(20,652.96)
HEALTH			
Income	20,652.00	18,307.11	16,926.41
Expense	(36,402.85)	(33,544.92)	(37,477.13)
Literature and resale items			
Income	12,369.90	12,098.81	13,466.40
Expense	(10,313.02)	(9,164.20)	(20,783.53)
Commercial exhibits			
Income	19,425.00	21,075.00	26,225.00*
Expense	(6,944.57)	(6,848.62)	(6,058.63)
Total convention			
Income	41,542.47	46,986.00	50,679.50*
Expense	(45,210.10)	(50,902.41)	(50,907.63)
Building			
Expense	(23,017.54)‡	(16,409.60)	(15,877.26)
Personnel procurement			
Expense	(949.25)	(604.13)	(2,211.55)
Office equipment and furnishings			
Expense	(14,522.51)	(9,354.45)	(6,328.90)
Office printing and supplies			
Expense†	(5,011.35)	(14,508.46)	(12,595.55)

*Chicago Convention
†Does not include such programs as OPF, Christmas Seals, and P.&P.S. projects.
‡Includes maintenance salaries.

Katherine Becker
Associate Editor

Report of the Editorial Department

▶ This meeting finds the Association without a permanent editorial head. Since Dr. Keesecker's death on April 17 was preceded by many months of illness the Department was, for a long period, without the day-to-day direction and leadership which it needs in addition to over-all management. The arrival of Dr. Brandt on May 23 brought a large measure of support to the editorial staff. It is impossible for lay personnel, however capable, to make the clinical and professional evaluations and contributions necessary for strong scientific and organizational publications.

The status of the four publications will be commented upon individually.

The Journal • Volume 59, which began with the September 1959 issue, has a completely revised format. Even the type used, Caledonia, is new. Comments on the new format have largely been favorable.

The increased size of THE JOURNAL is obvious to even the most casual observer, and, to the more careful one, it is equally obvious that there has been a disproportionate increase in the advertising pages. For the Association, the large number of ads is good in many ways. The financial advantages have been commented on in reports of the Business Manager. From a public relations viewpoint, the advertising is highly desirable and significant. From the editorial standpoint, it is rewarding and encouraging; it also brings with it the problem of providing editorial matter to balance the ads, and since advertising is expected to be available in greater and greater volume, it is going to be necessary to produce more and more reader copy.

The current volume of THE JOURNAL, concluding with the August issue, will have almost 250 more reader pages than the previous volume. These additional pages have in large part been accounted for by two new sections, A.O.A. Activities and New Products. The former was initiated in December 1957, but not until recent months did it expand to its present size and interest. The change has come about under the careful and skilled production of Ann Conlisk. Mrs. Conlisk's journalistic experience and long acquaintance with almost every segment of the profession make her invaluable in her present assignment. The New Products section, for which the Business Department secures the copy, first appeared in the June 1959 JOURNAL. Favorable comment has been made by members of the profession, and the good effect on advertisers needs no comment.

In the scientific publication of the Association, however, a large percentage of reader copy should be scientific. In recent years, the supply of this type of material has been decreasing, largely because of the change in character of the programs of the A.O.A. and of the specialty meetings. The scientific mainstays this last year, and for several years past, have been the masters' theses from the Philadelphia College of Osteopathy; theses from the American Osteopathic Board of Radiology and, in lesser number, from the American Osteopathic Board of Obstetrics and Gynecology; and program papers from the meetings of the specialty colleges, particularly the groups participating in the Clinical Assembly.

Positive steps to obtain manuscripts and to stimulate writing are mandatory for both present and future needs. There are sources which should be made productive, and others which should be explored.

Some of the specialty boards now require, in their basic documents, theses as a part of their certification programs. It is hoped that Central Office will be able to assist in getting these theses to be considered for publication in THE JOURNAL. It is hoped also that those specialty boards whose basic documents do not now require theses will incorporate the requirement, and that the theses will be made available to THE JOURNAL.

Although I am advised that there are requirements that papers suitable for publication be prepared during approved residency training, the Editorial Department receives few such papers. It seems apparent that further attention should be given these requirements.

Since failure to produce papers more often stems from a lack of knowledge about the mechanics of preparation than from a scarcity of subject matter, it would seem practical for the A.O.A. to provide qualified personnel to conduct intensive teaching courses upon request from the osteopathic colleges. An experienced medical writer and editor with well-prepared materials could in 3 to 5 days of well-planned sessions and conferences give the fundamentals to students and faculty members. Such a service could also be arranged for other interested groups.

The A.O.A. sends editorial representatives to meetings of many specialty college and other groups. Such trips could be much more productive if A.O.A. officials notified officers and program chairmen that representatives would be present to help with writing problems; urged that announcements of the representative's presence be made verbally and in programs; and suggested participation of representatives in symposia, seminars, etc., relating to medical writing.

Officials of specialty colleges should be urged to make available to the A.O.A. papers and case reports filed for partial fulfillment of membership requirements.

Program chairmen, including A.O.A. chairmen, should be requested to require written papers from participants, and to inform participants that papers are to be submitted to THE JOURNAL for publication. This information might provide the incentive to prepare papers, thus improving the quality of programs.

The Forum of Osteopathy • The number of pages in THE FORUM

during the fiscal year of 1959-60 was 910, an increase of 292 pages over 1958-59. The average number of pages per issue jumped from 51 to 76. The June 1960 issue, with 160 pages, was the largest in the history of THE FORUM. Convention exhibitors advertising in this issue accounted for a large part of the sharp increase. This advertising was given to exhibitors.

The ratio of reader-to-advertising pages was 322 to 296 in 1958-59; in 1959-60 it was 453 to 457.

In 1959-60, THE FORUM continued as the news magazine for A.O.A.-affiliated groups. Promotional material for A.O.A. projects, tice problems, to be published in the "Special Articles" section of the D.O.

Health • Judging from the letters expressing favorable response to articles published in HEALTH, this magazine continues to receive approval from its readers. Especially well received were three articles, all of which were reprinted for greater circulation. More than 28,000 reprints of "Seeing to Learn," published in the September 1959 issue, were ordered. Reprints of "What Smog Is Costing You" and "A Venture in Health Service," both from the March 1960 issue, will be members of the profession will contribute articles to HEALTH, provide source material from which articles can be written by staff people, or encourage persons from other professions to contribute articles; and that state and local auxiliaries will be encouraged again to promote subscriptions to HEALTH. (A request was recently received from one of the state auxiliaries for HEALTH subscription blanks, on which it planned to take orders for this magazine.)

Yearbook and Directory • The fifty-second edition of the A.O.A. DIRECTORY was mailed in January.

At the editorial luncheon—Left to right, at the head table, Dr. Arnold Melnick, chairman, Committee on A.O.A. Publications, and A.O.A. publication editors Katherine Becker, Dr. William E. Brandt, Ann Conlisk, and Betty Kanameishi.

of which the A.O.A. Convention was foremost, was also carried.

Preparations have been made for the birth of a new magazine, D.O., in September 1960 to replace THE FORUM, of which there have been 34 volumes. The contents will be essentially the same as THE FORUM with new departments added. Chief among these will be case histories prepared by interns in osteopathic hospitals. This will be the first scientific material to be published in an A.O.A. periodical other than THE JOURNAL.

It is hoped that Central Office will urge that groups affiliated with the A.O.A., osteopathic colleges, osteopathic hospitals, and individual physicians support the new "D.O." vigorously by keeping it supplied with news and pictures, and will encourage members of the profession to contribute articles on prac-

distributed at the Public Health Association annual meeting in October.

Since the last annual report was made, HEALTH has had to rely more heavily on paid articles. Increased pages in THE JOURNAL and THE FORUM have left less time to do research and write articles for HEALTH. Of the 54 articles, exclusive of regular features, published in the July-August 1959 through May-June 1960 issues, 15 were purchased from unsolicited free-lance sources, 4 were assigned to outside free-lance writers (mainly former A.O.A. editorial staff members who expressed a desire to continue writing for HEALTH), and 6 were reprints.

It is hoped that the profession will be urged to order and distribute reprints of articles it feels worthy of greater circulation; that This earlier distribution brought information more currently to users than did the previous April distribution.

Although its size and shape have not been greatly altered, there are changes in the make-up of the 1960 YEARBOOK AND DIRECTORY which are expected to meet with wide approval. These changes have been made for one purpose—to provide a more efficient reference tool.

Recommendations (approved) •

1. That the requirement of theses suitable for publication as part of the program for certification be incorporated in the basic documents of all specialty boards.

2. That the A.O.A. provide qualified personnel to conduct intensive teaching courses in medical writing at osteopathic colleges, upon request of the colleges.

Lawrence W. Mills
Director

Report of the Office of Education

▸ The entering class of 505 students last fall represented a drop of 11 from the entering class in the fall of 1958. Most of this drop occurred at the Philadelphia College of Osteopathy which had granted acceptances to 86 applicants, expecting an entering class of 80. During the week prior to matriculation, the Philadelphia College experienced a number of last-minute cancellations, and only 66 students matriculated. The Chicago College of Osteopathy with 71 entering students increased by 7 over 1958. The College of Osteopathic Physicians and Surgeons, with 101 entering students, increased by 11. The Kirksville College of Osteopathy and Surgery, with 95 entering students, showed a decrease of 10. The College of Osteopathic Medicine and Surgery, with 70 entering students showed a decrease of 5. The Kansas City College of Osteopathy and Surgery held to capacity.

The over-all predoctorate enrollment of 1,915 students dropped 27 from the over-all enrollment of 1958-59. It is pointed out that the 1959-60 fourth-year class of 428 students is the smallest graduating class during the last several years. This is due to last-minute cancellations in the entering class of 1956 at Kirksville, C.O.P.S., and C.O.M.S. which resulted in the comparatively small entering class of 487. This class also suffered a high mortality rate due primarily to academic failures. On the other hand, the graduating class in 1961 will be the largest in the history of osteopathic education.

Premedical Student Pool • The National Health Council sponsored its second Personnel Recruiting Conference in October 1959. This conference was attended by representatives from seventeen more agencies than were represented at the first conference in 1958. In 1958, no representatives from the A.M.A. or the Association of Medical Colleges were in attendance. In 1959, five representatives of the A.M.A. were there. The American Dental Association and Council on Dental Education sent three representatives in 1958. The American Public Health Association at its annual meeting in Atlantic City, New Jersey, also sponsored a seminar on recruiting personnel for the health fields. The A.O.A. was represented at this seminar which was programed by the National Health Council. The Association of Medical Colleges held a recruiting conference in August 1959, and laid the groundwork for a national program of interesting people of high school age in the field of medicine.

The October report, "Physicians for a Growing America," compiled by the Advisory Committee to the Surgeon-General of the United States Public Health Service, emphasized the need for active recruiting in order to increase the number of high school and undergraduate college students interested in medicine as a career.

In most of the thirty-five colleges and universities we visited during the 1959-60 academic year, we noted increased undergraduate enrollment, but a decreasing number of undergraduates, especially freshmen, who showed an interest in a medical education. In one of the large state colleges in California, only 41 entering freshmen in a class of 4,500 indicated an interest in medicine. However, this trend was not repeated in most of the colleges and universities in the New York City area. In such institutions as the College of the City of New York, Brooklyn College, Columbia University, and New York University, the number of medical students was on the increase.

Vocational guidance • Student recruiting and vocational guidance continues to be the number one project in many state societies. Letters have been written to various chairmen urging them to increase their activities, and urging others to get started. Rhode Island, which had never conducted a state program, held its first educational meeting in October under the leadership of Dr. Kenneth Scott. This meeting was well attended by premedical advisors, secondary school teachers, and representatives of state departments of education. Four colleges and universities were well represented. The meeting resulted, a week later, in members of the profession meeting with a premedical group at Brown University. Similar group meetings will be held in other colleges in the state.

Under the direction of Wendell Fuller, registrar of the College of Osteopathic Medicine and Surgery, a successful meeting was held in Des Moines. This included a good program at the College, attended by high school students, students from Drake University, and faculty representatives. Similar meetings are planned for other centers in Iowa.

The assistant dean of the Kirksville College of Osteopathy and Surgery initiated a program of visiting both colleges and high schools in northeastern Missouri. With the assistance of the student body at Kirksville, a High School Day was held at the College.

Osteopathic representatives for high school career days and high school assembly talks were better

OSTEOPATHIC COLLEGE ENROLLMENT 1959-60

College	First-Year Students	Second-Year Students	Third-Year Students	Fourth-Year Students	Total
CCO	71	51	68	58	248
COMS	70	71	74	53	268
COPS	101	88	96	74	359
KC	102	100	107	94	403
KCOS	95	94	85	66	340
PCO	66	69	79	83	297
	505	473	509	428	1,915

this year than ever before. The state departments of education in Arkansas and Nebraska asked for literature to distribute to high school counselors. This literature is paid for by the state societies.

Dr. William Church, vocational guidance chairman of the Canadian Osteopathic Association, sent 4,000 vocational guidance booklets to the colleges and secondary schools in the provinces.

The student body at Kansas City continues to do an outstanding recruiting job. Students in this College year after year have been almost solely responsible for the fact that the Kansas City College annually receives more completed applications than any other osteopathic college.

One of the interesting trends in the entering classes in the six osteopathic colleges in 1959 was the increase in the number of students from Washington, Wisconsin, Georgia, West Virginia, and Kansas. Washington and Wisconsin are particularly noted because of increased activity in those states last year in student recruiting.

The public relations program being carried on by the Auxiliary to the American Osteopathic Association through its Scholarship Committee is a far-reaching one. Information about the A.A.O.A. scholarship program was sent to 750 colleges and universities last fall, and this spring ten scholarships for $1,000 each were granted. The caliber of the applicants was high.

Such divisional societies as those of California (assisted by the state auxiliary), Maine, Texas, Washington and Canada are conducting scholarship programs, as are such district societies as the Eastern Oklahoma Osteopathic Association and the staff of the Garden City Hospital, Garden City, Michigan. The Florida legislature has established ten scholarships of $4,000 each for entering medical students. It is significant that one of them is for an osteopathic college entrant.

The new A.O.A. exhibit developed by the Division of Public and Professional Service was shown at the conventions of the National Education Association and the American College Personnel Association. This is a splendid exhibit, based on the report, "Physicians for a Growing America."

The year's budget for literature for distribution was the largest thus far set up. However, it did not meet the demand, and the allotted sum was exceeded by 25 per cent.

This year's vocational guidance efforts were the greatest we have known. Fundamentally, however, recruiting is based on the individual effort of the osteopathic physician in his community. Grass roots recruiting at the high school and undergraduate college levels must be accelerated. Visits to colleges in Virginia and New York were followed by this kind of activity on the part of local physicians.

Field work • During the year we have visited four of the six osteopathic colleges and thirty-five undergraduate colleges in California, Florida, Illinois, Michigan, New York, Ohio, Pennsylvania, and Virginia. We have been asked to address six public relations dinners and service clubs, and have attended ten meetings of national associations.

Robert A. Klobnak
Director

Division of Public and Professional Service

► This report will attempt to review the many activities and programs of the Division of Public and Professional Service. Because of the variety of activities and programs, each will be covered separately.

Development • Since the formation of the Council on Development, the Division staff has been thoroughly integrated into its activities and programs. This is as it should be, since public relations and development are inseparable.

Although the report of the Council on Development will cover its various programs, it is felt that one area of activity may properly be highlighted here. This is the informational program that for 2 years has been directed at medically oriented foundations and other selected publics. As its part in the program, the Division has carried out two projects. The first was the production and distribution, over the 2-year period, of three related brochures, "Focus on the Future," "Focus on Education," and "Focus on Hospitals." A fourth, "Focus on Research," is scheduled for mailing on September 15. "The Role of the A.O.A." and the monthly *News Bulletin* also were distributed as a part of the project.

The second project, carried forward with the cooperation of state councils on development, was the compilation of a file of information on the acquaintanceship of members of the profession with members of foundation boards and staffs within their states. This project will be completed in mid-September, and with the completion of the informational mailings, will prepare the way for the selection of solicitation teams to call on foundations.

The announcement of the Rockefeller grant was most timely. It broke at the peak of the Division's informational program, and should make other foundations receptive to proposals of support for osteopathic education and research.

New A.O.A. film • The motion picture, "American Doctor," is expected to be available this fall (see story on page 32. The production has been under way since last year. On recommendation of the Division, an audio-visual picture plan was first developed. This was a set of slides which gave a preview of plot and form, served as a gauge for cost, and as an opportunity to test the film's possibilities on audiences that included members of the profession, students, and the lay public.

More than 90 per cent of those who saw the picture plan rated it as excellent, and at the midyear meeting the A.O.A. Board of Trustees allocated $110,000 for the production of a 30-minute motion picture. The amount covers the cost of production, 60 release prints, and distribution for 1 year. It is

Convention press room—Left to right, Michaele Early, Otha Linton, Robert Bradner, Leonard Heffel, and Barbara Blumofe, of the A.O.A. staff of Public and Professional Service. In the foreground, Conwell Carlsen, medical editor of the Kansas City Star.

expected that more than 9,000,000 people will view the film on television the first year. It will also be shown at meetings of civic and professional groups, and in schools and libraries. A 12-minute "short" is planned for theater viewers.

Book on the A.O.A. • Fall publication has been set for the book on the profession that is being written by Sheldon Samuels, an editor of Oceana Publications of New York. Indications are that the book, for which the A.O.A. is cooperating in providing information, will provide a practical and objective document on osteopathy. The publishers will give the book comprehensive reviews and advertising.

New radio series • Thirteen scripts for a new radio series, "Public Health Enemies," have just been completed, each dealing with a particular aspect of national health. These 5-minute programs will be produced in co-operation with the U. S. Public Health Service. The scripts have been sent to Washington for PHS review, and will be transcribed shortly.

News Bulletin • The monthly *News Bulletin* continues. It is sent to people within the profession, and to such key publics as foundations, health agencies, and science writers. As a medium for reporting the osteopathic profession's role in national health, the *Bulletin* is performing an increasingly valuable service.

The Division also continues to provide layout and production assistance to the *Newsletter* of the National Osteopathic Guild Association.

During the year the Division has produced, in addition to the "Focus" brochures, a pamphlet on exhibits, as the final booklet in the Public Relations kit prepared last year, and two booklets to be used by registered and approved hospitals to acquaint patients and the public with osteopathic hospitals.

National magazines • The Division continues to maintain liaison with national magazines, to suggest story possibilities, and to provide information. Misleading and derogatory references to osteopathy are called to the attention of editors.

Life is currently preparing an article on the osteopathic profession. The Division and other A.O.A. staff and college people have been working closely with the writer.

Exhibits • A new exhibit based on the U. S. Surgeon General's Consultant Group on Medical Education report, "Physicians for a Growing America," was produced this year, and was first used at the Chicagoland Health Fair in March. It has since been used at meetings of the American Personnel and Guidance Association, National Education Association, and the New York Health Exposition. It will be one of the exhibits of the American Public Health Association convention this fall. The new exhibit has been well received, and the previous one is being lent to divisional societies.

Convention coverage • Since last July, members of the staff have provided public relations coverage for seventeen conventions of state societies and specialty colleges. It has also provided biographic material, pictures, and stories to cover official appearances of A.O.A. and A.A.O.A. officials.

Representation at meetings • The director represented the profession at meetings of the American Public Welfare Association, the National Health Council Forum, the Public Relations Society of America, the midyear and annual conferences of the American Medical Association, and the Public Relations Institute of the National Publicity Council for Health and Welfare Agencies.

Otha Linton covered a meeting sponsored by the Office of Civil Defense Mobilization. A special article by Mr. Linton, "The D.O. in Disaster Medicine," appeared in THE JOURNAL for July.

The profession continues to benefit from the Paducah Health Education Study, completed almost 2

years ago. The director, as a participant on a panel at the Public Relations Institute, presented findings of the Paducah study to more than 400 health and welfare agency executive and public relations people. An article on the study is being featured in a forthcoming issue of *The Journal of the American Public Health Association.*

A.O.A. journalism awards • The third annual A.O.A. Journalism Awards Competition brought an increase in the number of entries over the 2 previous years. Winners were Blair Justice of the *Fort Worth Star-Telegram,* his second award; Brian Duff of the Copley News Service; and Betty Kohlman of the *Tampa Tribune.*

Science News Abstracts • Each month several scientific articles which appear in THE JOURNAL are abstracted as science news stories and are provided to more than 1,100 science writers and editors.

The next twelve months • Walter G. Barlow, president of the Opinion Research Corporation, recently said:

"A research-documented principle in the field of image-building is that the better known an organization gets, the more favorable are people's opinions about or attitudes toward it. While there are demonstrable exceptions, the fact is that the more people get to know an organization, the more they find to like; the more they find to like, the more their enthusiasm can be built and their support obtained."

This statement is particularly pertinent to the osteopathic profession. In the next 12 months more people will be exposed to the osteopathic story than at any other time in the profession's history. The coming article in *Life* (with its 6,000,000 circulation) will remove barriers to the Division's relationship with other national publications; the new A.O.A. film will be seen by more than 9 million people; the new radio series has an audience potential of 160 million; and the availability of the new A.O.A. book will for the first time provide the nation's libraries and bookstores with an up-to-date source document on osteopathy.

John W. Mulford, D.O.
Chairman

Committee on Mead Johnson Grants

► Mead Johnson and Company, Evansville, Indiana, was the first pharmaceutical company to establish a graduate education program for the American Osteopathic Association. It was established in 1955, with an annual grant of $3,000. This was increased to $6,000 in 1957 and to $9,000 in 1959.

The generosity of Mead Johnson and Company has enabled twenty-four osteopathic physicians to engage in 1 or more years of graduate education in the fields of general practice, pediatrics, obstetrics and gynecology, and internal medicine. Currently, there are nine graduates participating in the program.

Certificates awarded • Certificates were awarded to 1959 grantees on completion of their year of study. They included Drs. David J. Simon, for work in general practice; Alfred A. Paternoster, obstetrics and gynecology, and George M. Haber, internal medicine, all of the College of Osteopathic Physicians and Surgeons, Los Angeles; Melvin J. Anderson, for work in internal medicine at the Chicago College of Osteopathy; Franklin J. Schneiderman, for work in pediatrics at the Kirksville College of Osteopathy and Surgery; and A. Eugene Marguglio, for work in obstetrics and gynecology at the Kansas City College of Osteopathy and Surgery.

Annual awards • The annual awards meeting of the Committee was held in the offices of Mead Johnson and Company in Evansville on May 26. In attendance were the Committee members Dr. John W. Mulford, chairman; Paul van B. Allen, and Joseph W. Elbert. Committee consultants Walter A. Suberg, A.O.A. Business Manager, and Lawrence W. Mills, director of the Office of Education, also attended. All were guests of the company.

These nine physicians received fellowships for 1960: In general practice, Walter N. Goodman, Los Angeles, and Robert E. Kappler, Chicago; in obstetrics and gynecology, James E. Lyster, Los Angeles; in pediatrics, Walter M. Pavlowich, Chicago, Gerald J. Hohn, the College of Osteopathic Medicine and Surgery, Des Moines, and Leon A. Janis, Los Angeles; in internal med-

Members of the Committee on Mead Johnson Grants—Left to right, Drs. Paul van B. Allen, John W. Mulford, chairman, and Joseph W. Elbert.

icine, Augustin Acosta, Des Moines, Milan Lesko, Kirksville, and Charles I. Schulman, Chicago.

The 1961 Mead Johnson grants will consist of three in general practice and two each in pediatrics, obstetrics and gynecology, and internal medicine. Announcement of the 1961 program will be carried in THE JOURNAL and in D.O., beginning with the October issues.

Interest in the program is evidenced by the increase in applications each year. The Committee appreciates the cooperation of the presidents and deans of the osteopathic colleges in bringing the program to the attention of their students.

Of the Mead Johnson and Company, the Committee wishes to express sincere appreciation to W. D. Snively, Jr., M.D., vice president and medical director; Mrs. L. J. Sandefur, executive secretary of the Mead Johnson Graduate Training Program; and to Miss Martha Wessner, manager of extension services.

The Committee also expresses appreciation for the counsel and assistance of its consultants, Dr. George W. Northup and Mr. Mills, and of these members of the Central Office staff: Dr. True B. Eveleth, Executive Director, Mr. Suberg, and Kenneth L. Ettenson, Treasurer; to Katherine Becker and Betty M. Kanameishi, associate editors, and Ann Conlisk, assistant editor.

Campbell A. Ward, D.O.
Chairman

Committee on Format and Scheduling of National Conventions

▶ The Committee on Format and Scheduling of National Conventions met with consultants of the Central Office staff on October 10, 1959. The main purpose of the meeting was to act upon this directive of the House of Delegates: "That the business session of the Board of Trustees and the House of Delegates be separated from the Annual Convention of the American Osteopathic Association by 1961."

After considerable discussion, it was decided that the Chicago commitment for 1961 be terminated.

Program Advisory Committee • In December, this Committee met in Central Office with representatives of the twelve specialty colleges, the Academy of Applied Osteopathy, the American College of General Practitioners in Osteopathic Medicine and Surgery, and the Speaker of the House of Delegates. The purpose of the meeting was to elect a Program Advisory Committee which was, in turn, to elect its own chairman. This was done in compliance with the House and Board directive which reads: "That there be appointed a Convention Program Advisory Committee of six, representing the specialty colleges, Academy of Applied Osteopathy, and the American College of General Practitioners in Osteopathic Medicine and Surgery. The first committee to be set up would have two members for 3 years, two members for 2 years, and two members for 1 year. Thereafter, two new members would be appointed each successive year until all groups have been represented." The six members were nominated and elected, and each drew a ballot to indicate the number of years each is to serve. They are:

Margaret H. Raffa, Academy of Applied Osteopathy, 1 year; Ward E. Perrin, American College of Osteopathic Internists, 1 year; W. Clemens Andreen, American College of General Practitioners in Osteopathic Medicine and Surgery, 2 years; Charles L. Ballinger, American College of Osteopathic Surgeons, 2 years; Arnold Melnick, American College of Osteopathic Pediatricians, 3 years; P. J. McGregor, American College of Osteopathic Obstetricians and Gynecologists, 3 years.

Dr. Perrin 1961 Program Chairman • The group elected Dr. Ward Perrin as its chairman, and Dr. Perrin immediately made assignments for the 1961 Convention. The entire group unanimously voted to accept the request of the A.O.A. Bureau of Conventions that the 1961 Convention be held in Miami Beach, Florida, in January.

The aid and advice given this Committee is gratefully acknowledged.

Recommendation (approved) •

1. That the Committee on Format and Scheduling of National Conventions, having accomplished the directives of the House and Board, be discharged.

At the reception for convention exhibitors—President Galen S. Young, center, and Business Manager Walter A. Suberg, left, visit with guests.

Herbert L. Sanders, D.O.
Chairman

Joint House-Board Committee on Manual of Procedure

► The Committee on Manual of Procedure has been functioning since it was set up in July 1957, instructed "to study the function of the *Manual of Procedure* and make recommendations to the Board of Trustees and the House of Delegates in the form of a revision of that document, so that it may be consistent with the present policies of this Association."

The Committee reported in July 1958, with specific recommendations as to the form in which the *Manual* was to be prepared. All recommendations were approved by the Board, which has the duty of maintaining, and revising as necessary, the *Manual of Procedure.*

Administrative Guide • The first edition of the *Administrative Guide,* published last year, will be revised after this year's House of Delegates has acted upon Constitution and By-Law amendments necessary to complete the reorganization of A.O.A. structure. Minor revisions will also be made in the *Handbook of Procedure for the House of Delegates and Board of Trustees,* prepared and approved in 1958. Handbooks for several bureaus and committees are now in use, and others will be completed in the future.

Digest of Actions • Also in process, as directed, is a *Digest of Actions* of the A.O.A. since its organization in 1897. Actions through the year 1913 have been extracted. This information is being arranged chronologically by subject, and should provide a convenient and valuable history of the development of the Association. It is estimated that at least a year will be required to complete the *Digest.* Consideration was given to having the Committee come to the Central Office, where the necessary documents are on file, to cover the remainder of the work. It was estimated, however, that this would require two or perhaps three meetings of 12 to 14 days each. This, of course, would be very expensive and time-consuming, and is considered impracticable.

After the *Digest* and the various handbooks of bureaus and committees are compiled, the directed revision of the *Manual of Procedure* will be completed. Compilation of the *Manual* is primarily a Central Office activity, with the Committee acting in a supervisory capacity and recommending procedures and ratifying changes. It is recommended that the Committee be continued.

Recommendation (approved) •

1. That the Joint House-Board Committee on Manual of Procedure be continued and that it counsel in the compilation of the *Digest* and the revision of the *Manual of Procedure* being carried on by members of the Executive Director's staff.

J. S. Denslow, D.O.
Chairman

Committee on Council on Accreditation

► The ad hoc Committee on Council on Accreditation, made up of the chairman and Drs. George W. Northup and Clyde C. Henry, met in Central Office May 21. Inasmuch as Dr. Northup and Dr. Henry are members of the Bureau of Professional Education, also meeting at that time, this Committee met jointly with the Bureau and its consultants. These included Drs. Galen S. Young, Roy J. Harvey, Ira C. Rumney, and True B. Eveleth, and Mr. Lawrence W. Mills.

The chief purpose of the meeting was to study the immediate addition of full-time members to the staff of the Office of Education in Central Office. Their function would be to assist in the work of the Bureau of Professional Education. Recommendations of the former ad hoc committee in this matter and consequent action by the Board of Trustees were discussed at length.

Two areas of study • Thorough study was devoted to two areas: first, the needs and qualifications of a staff member to assist in postgraduate programs which are the responsibility of the evaluating committees of the specialty colleges, the Committee on Hospitals, the Committee on Accreditation of Postgraduate Training, and the Advisory Board for Osteopathic Specialists; and second, the over-all needs of osteopathic education. The Bureau of Professional Education and its Committee on Colleges are already implementing a plan to use expert educational consultants on a per diem basis.

Recommendations (approved) •

1. That a program be established to provide additional leadership in the continuing development of predoctorate and postdoctorate education in osteopathic institutions, and to strengthen existing programs in this area.

2. That a person with administrative talent be added to the Office of Education and assigned to functions referable to the Committee on Hospitals, the Committee on Accreditation of Postgraduate Training, and the Advisory Board for Osteopathic Specialists as soon as is feasible.

3. That an individual who has had training and experience in teaching and educational administration be employed by the Board of Trustees at the earliest possible date.

4. That implementation of the recommendations made by the Committee on Council on Accreditation become the responsibility of the Bureau of Professional Education.

5. That the Committee on Council on Accreditation be discharged with appropriate thanks.

Amendments to the Constitution and By-Laws of the American Osteopathic Association

True B. Eveleth, D.O., Executive Director, Chicago

The following amendments adopted by the House of Delegates, July 1960, became effective at the close of the A.O.A. Convention, July 22, 1960.

Constitution

ARTICLE VII—OFFICERS

(The following amendment provides for the succession to the presidency of the Immediate Past President in case of the inability of the President.)

Amend Article VII—paragraph 2, the second line following the words "devolve upon the," by deleting the remainder of the paragraph and substituting therefor the following: "Immediate Past President, and in the event of his inability to serve, the responsibility shall devolve upon the Board of Trustees."

The paragraph now reads: "In case of inability upon the part of the President to serve during the term of office for which he has been elected, his office and duties shall devolve upon the Immediate Past President, and in the event of his inability to serve, the responsibility shall devolve upon the Board of Trustees."

(The following amendment changes the title of Executive Secretary to Executive Director.)

Amend the third paragraph of the Article by deleting, in the first and third sentences, the words "Executive Secretary," and substituting therefor the words "Executive Director."

ARTICLE IX—MEETINGS

(The following amendment provides for the selection of the convention city by the Board of Trustees.)

Amend Article IX by deleting the first paragraph and substituting therefor the following: "The annual meetings (conventions) shall be held at such time and place as may be determined by the Board of Trustees, provided, however, such action may be changed by the House of Delegates by a two-thirds vote of the total number of Delegates accredited for voting."

Further amend the Article by deleting, in the second paragraph, the word "House," and substituting therefor the word "Board."

The paragraph would then read: "In selecting the convention city, the Board may take action covering not more than five succeeding conventions."

ARTICLE X—AMENDMENTS

(The following amendment makes consistent, references in the Constitution to the Executive Director.)

Amend the Article by deleting the word "Secretary" and substituting therefor the word "Director."

By-Laws

ARTICLE II—MEMBERSHIP

(The following amendment provides for temporary amendment of membership eligibility.)

Amend Section 1 by adding in the first sentence, after the word "resides," the following clause, "except that for a period of fifteen days following the close of the 1960 American Osteopathic Association Convention, a graduate of a college of osteopathy who graduated prior to July 1, 1944, from a college of osteopathy whose graduates were eligible for licensure in the state in which said college was located at the time of his or her graduation is hereby declared eligible for regular membership in the American Osteopathic Association, and further, that following the aforesaid fifteen-day period this amendment will become null and void and be stricken from the record."

(The following amendments provide for two types of special membership, life and honorary life.)

Amend Section 3 of Article II by inserting before

the words "life membership," the word "Honorary."

The paragraph now reads: "Honorary life membership shall be conferred on each President upon conclusion of his term of office. Such honorary life membership shall not exempt the holder thereof from the maintenance of regular membership in his divisional society nor from assessments levied by this Association."

Further amend Section 3 by adding a second paragraph to read as follows:

"Honorary life membership may also be conferred by the Board of Trustees on a regular member who has been in good standing for twenty-five consecutive years immediately preceding, and who has rendered outstanding service to the profession at either the state or national level, or who is recommended for such a membership by official action of his divisional society and the Committee on Membership. Such honorary life members shall have the privileges and duties of regular members including the payment of assessments levied by the Association, but shall not be required to pay dues."

(The following amendment to Section 4 of Article II liberalizes the requirements for a life membership.)

Further amend Article II by deleting the present Section 4 and substituting therefor the following: "Life membership may be granted by the Board of Trustees to any regular member who has reached the age of seventy, or who has completed fifty years of osteopathic practice, whichever comes first, and who has been in good standing for twenty-five consecutive years immediately preceding. Such members shall have the privileges and duties of regular members but shall not be required to pay dues or assessments.

"Life membership may also be granted by the Board of Trustees, on recommendation of his divisional society, to any regular member who has become permanently totally disabled. Such members shall have the privileges and duties of regular members but shall not be required to pay dues or assessments."

ARTICLE III—FEES AND DUES

(The following amendments change the name of THE FORUM OF OSTEOPATHY.*)*

Amend Section 1 by deleting, in the second paragraph of the section, the words, "THE FORUM OF OSTEOPATHY," and substituting therefor the title, "D.O."

Further amend Article III by deleting, in Section 4, the words "THE FORUM OF OSTEOPATHY," and substituting therefor the title, "D.O."

ARTICLE V—HOUSE OF DELEGATES: METHODS OF ELECTION AND DUTIES

(The following amendment specifies the meeting time of the House of Delegates.)

Amend Section 6 by deleting the first paragraph thereof and substituting therefor the following: "The annual meeting of the House of Delegates shall be held during June, July or August, and separate from the annual convention or clinical assembly of the Association, upon call of the President. Special sessions of the House of Delegates may be called by the President. The Delegates shall be given at least two weeks' notice and the object or objects shall be stated in the call of such special meeting."

ARTICLE VI—ELECTIONS

(The following amendment changes the days on which nominations and elections are to take place so that, if desired, the House would not need to be in session for 4 days.)

Amend Section 1 by changing the first two sentences of the Section to read as follows:

"Nomination of all Officers and Trustees of this Association, and nomination of the Speaker and Vice Speaker of the House of Delegates, excepting nomination of those otherwise provided for in the Constitution, shall be a regular order of business in the House of Delegates on the second day of the annual meeting of the House. Election of such Officers and Trustees as are elected by the House of Delegates shall take place during the third day of the annual meeting."

ARTICLE VII—DUTIES OF BOARD OF TRUSTEES

(The following amendment clarifies the meeting time of the Board of Trustees.)

Amend Section 1 by deleting the word "Association" in the second sentence of the Section and substituting therefor the words "House of Delegates." The sentence now reads: "It shall meet coincident with the annual meeting of the House of Delegates and at other times on call of the President," . . . etc.

ARTICLE VIII—DUTIES OF OFFICERS

(The following amendment clarifies the phraseology of Section 1.)

Amend Section 1 by deleting the first two sentences of the Section and substituting therefor the following: "The President shall be the chairman of the Board of Trustees and of the Executive Committee and shall perform the duties usually pertaining to his office."

(The following amendments make the By-Laws consistent with the Constitution.)

Amend Section 4 of Article VIII by deleting the first sentence of the Section and by substituting therefor the following: "The Executive Director shall be the chief administrative officer of the Association and of the Central Office."

ARTICLES I, II, IV, V, VII, VIII, IX AND X

Since an amendment to Article VII of the Constitution was adopted, changing the title of Executive Secretary to Executive Director, amend each of the above articles by deleting the word "Secretary" wherever it appears in the title "Executive Secretary" and by substituting therefor the word "Director."

House Committee on Credentials

Vernon H. Casner, Chairman, Kirksville, Missouri

Divisional Society	A.O.A. Members	Delegates	Vote	Delegates Seated
Alabama	3	1	1	(Not represented)
Alaska	1			W. G. Sutherland*
Arizona	132	2	6	Russell Peterson
				Franklin P. McCann
Arkansas	9	1	1	H. V. Glenn
California	1,988	21	99	Glen D. Cayler
				Nicholas V. Oddo
				Dorothy J. Marsh
				Richard W. Johnson
				Glenn F. Gordon
				Joseph P. Cosentino
				Eugene E. Dong
				Charles Kranzdorf
				Loron N. McGillis
				Silas Williams
				Paul D. Yates
				Charles C. Dieudonne
				Vincent P. Carroll
				J. Ralph Hughes
				Frank E. MacCracken
				David B. Bosworth
				Stephen P. Teale
				Munish Feinberg
				Jordan M. Phillips
				Don C. Littlefield
				Betsy B. MacCracken
				J. G. Epperson
				Murray Medoff
Colorado	186	3	9	A. Hollis Wolf
				C. R. Patterson
				Harold L. Will
Connecticut	31	1	1	James T. Berry
Delaware	27	1	1	John C. Bradford, Sr.
Dist. of Col.	12	1	1	Chester D. Swope
Florida	366	4	18	W. S. Horn
				Paul E. Wilson
				George W. Frison, Sr.
				B. M. Routzahn
				W. E. Stanfeld
Georgia	44	1	2	Loren L. Hatch
Hawaii	9	1	1	Isabelle Morelock
Idaho	18	1	1	W. E. Smith
Illinois	226	3	11	Louise Astell
				S. V. Robuck
				George F. Marjan
Indiana	160	2	8	James H. McCormick
				James A. Dillon
Iowa	313	4	15	Jean F. LeRoque
				John W. Campbell
				Holcomb Jordan
				John Q. A. Mattern
Kansas	126	2	6	B. L. Gleason
				Robert L. Wright
Kentucky	27	1	1	Paul E. Dunbar
Louisiana	14	1	1	(Not represented)
Maine	144	2	7	Lawrence W. Bailey
				Edward T. Newell
Maryland	10	1	1	Morris Augur
Massachusetts	132	2	6	William A. Seeglitz
				W. H. Hoyt, Jr.
Michigan	1,448	15	72	Alan M. Potts
				Donald L. Cummings
				Donald J. Evans
				Joseph A. Walker
				W. C. Andreen
				Robert E. Benson
				J. V. Murphy
				W. S. Willman
				R. A. Gadowski
				John H. Morrison
				P. N. Munroe
				A. H. Fuller
				L. C. Cobb
				F. J. Chase
				Gerhardt R. Fritz
				Jack D. Comstock
Minnesota	62	1	3	Dale Dodson
Mississippi	1			(No organization)
Missouri	843	9	42	George W. Ringland
				Gilbert H. Kroeger
				Richard A. Michael
				W. A. Rohlfing
				Wilber T. Hill
				John C. Taylor
				Hooken N. Tospon
				Vernon H. Casner
				James R. Nordstrom
				J. Myron Auld
Montana	8	1	1	Lester F. Howard
Nebraska	33	1	1	A. G. Zuspan
Nevada	15	1	1	O. W. Shelksohn
New Hampshire	13	1	1	Edna C. Waterhouse
New Jersey	317	4	15	Henry Palmaffy
				Alex E. Maron
				James J. Riviello
				Samuel S. Tropea
New Mexico	83	2	4	Lory Baker
				Robert E. Smith
New York	331	4	16	William E. Kaufmann
				George F. Johnson
				Alexander Levitt
				William D. Miller
North Carolina	18	1	1	Joseph H. Huff
North Dakota	9	1	1	Georgianna Pfeiffer
Ohio	741	8	37	A. R. Fuller
				L. D. Sells
				Carl B. Gephart
				J. M. Wright
				J. D. Hutchison
				R. L. Thomas
				Donald J. Ulrich
				John W. Hayes
Oklahoma	283	4	14	R. D. McCullough
				G. R. Thomas
				J. Mancil Fish
				Ray H. Thompson
Oregon	118	2	5	J. S. Heatherington
				Paul T. Rutter

*Seated as representative, without vote.

Divisional Society	A.O.A. Members	Delegates	Vote	Delegates Seated
Pennsylvania	995	11	49	Henry N. Hillard
				William L. Silverman
				David Shuman
				Stephen E. Cronen
				Roy E. Hughes
				Paul S. Young
				Lynn F. Brumm
				William S. Spaeth
				William Baldwin, Jr.
				Arnold Melnick
				George B. Stineman
				Aaron A. Feinstein
Rhode Island	62	1	3	Terrell E. Cobb
South Carolina	4	1	1	(Not represented)
South Dakota	33	1	1	(Not represented)
Tennessee	48	1	2	Marion E. Coy
Texas	556	6	27	Loren R. Rohr
				Raymond D. Fisher
				Glenn R. Scott
				Michael A. Calabrese
				Clifford E. Dickey
				Andrew Roland Young
Utah	14	1	1	(Not represented)
Vermont	18	1	1	Lincoln A. Jacobs
Virginia	26	1	1	John A. Cifala
Washington	139	2	6	Arthur E. Borchardt
				Richard S. Koch
West Virginia	85	2	4	Earl K. Lyons
				Hoy E. Eakle
Wisconsin	130	2	6	James W. Stout
				Edward M. Keller
Wyoming	8	1	1	(Not represented)
British Columbia	9	1	1	(Not represented)
Manitoba	3	1	1	Fred H. Deeks
New Brunswick	1			(No organization)
Ontario	26	1	1	Donald A. Jaquith
Quebec	3	1	1	Allan A. Eggleston
				Bruce E. Marshall
Saskatchewan	2	1	1	(Not represented)
B.O.A. (Foreign)	29	1	1	(Not represented)
Australia (includes New Zealand)	8	1	1	(Not represented)

Editor's Note—No delegation had more than the prescribed number of delegates at any one time. Only delegates properly certified within the time limit were seated.

American Osteopathic Association Officers and Trustees—1960-61

President—Roy J. Harvey*
President-Elect—Charles L. Naylor*
Past Presidents—Galen S. Young*
George W. Northup*
First Vice President—Wesley B. Larsen*
Second Vice President—Loren R. Rohr*
Third Vice President—James H. McCormick*
Executive Director—True B. Eveleth
Treasurer—Mr. Kenneth L. Ettenson
Business Manager—Mr. Walter A. Suberg
Acting Editor—William E. Brandt

TRUSTEES

Robert D. Anderson, Lydia T. Jordan, Wallace M. Pearson, Herbert L. Sanders, Campbell A. Ward *(Term expires 1961)*
J. Scott Heatherington, Russell M. Husted, Dominic Raffa, J. Edward Sommers, William B. Strong *(Term expires 1962)*
J. Mancil Fish, John W. Hayes, Earl K. Lyons, Eugene D. Mosier, Ira C. Rumney *(Term expires 1963)*
*Also Trustee

EXECUTIVE COMMITTEE

Roy J. Harvey	Charles L. Naylor	Ira C. Rumney
Galen S. Young	Wesley B. Larsen	Russell M. Husted

HOUSE OF DELEGATES' OFFICERS

Speaker—Charles W. Sauter, II
Vice Speaker—Philip E. Haviland

Departments, Bureaus, and Committees

I. DEPARTMENT OF PROFESSIONAL AFFAIRS
Ira C. Rumney, Chairman

A. Bureau of Professional Education—Clyde C. Henry (1962), Chairman (1960-61); Robert B. Thomas (1962), Advisor; George W. Northup (1961), Robert D. McCullough (1961), William Baldwin, Jr. (1961), Thomas J. Meyers (1961). Mr. Lawrence W. Mills, Secretary

1. Committee on Colleges—George W. Northup (1962), Chairman (1960-61); Dale Dodson (1963), Vice Chairman (1960-61); Campbell A. Ward (1963), John P. Schwartz (1962), Charles C. Dieudonne (1961), George S. Cozma (1961), Sherwood R. Mercer (1961) (Association of Colleges). Mr. Lawrence W. Mills, Secretary

2. Committee on Hospitals—Robert D. McCullough (1961), Chairman (1960-61); Herbert L. Sanders (1963), Vice Chairman (1960-61); William L. Silverman (1962), Ralph F. Lindberg (1962), M. C. Pettapiece (1963) (Radiology), John P. Schwartz (1963) (Surgery), Victor R. Fisher (1961) (Internal Medicine), Richard E. Eby (1962) (Obstetrics and Gynecology). Miss Patricia A. Guinand, Secretary

3. Committee on Accreditation of Postgraduate Training—William Baldwin, Jr. (1963), Chairman (1960-61); Harry A. Barquist (1963), Nicholas V. Oddo (1962), Howard C. Baldwin (1962), Daniel W. McKinley (1961). Mr. Lawrence W. Mills, Secretary

4. Advisory Board for Osteopathic Specialists—Thomas J. Meyers (1963), Chairman (1960-61); Norman W. Arends (1963), Vice Chairman (1960-61); John W. Hayes (Board of Trustees), Dale Dodson (1961) (Committee on Colleges), William L. Silverman (1961) (Committee on Hospitals), Robert A. Kistner (Association of Colleges). Mr. Lawrence W. Mills, Secretary

5. Committee on Student Loan Fund—Robert N. Evans (1963), Chairman; Lloyd R. Wood (1962), K. R. M. Thompson (1961), Mr. W. A. Suberg, Miss Dorcas Sternberg, Secretary, Clara Wernicke (Honorary Member)

B. Bureau of Research—Robert A. Galbraith (1962), Chairman (1960-61); Otterbein Dressler (1963), Vice Chairman (1960-61); Alexander Levitt (1961), Leonard V. Strong (1964), Henry N. Hillard (1964), W. D. Henceroth (1965). Miss Marie Bierbaum, Secretary

C. Bureau of Organizational Affairs—Wallace M. Pearson, Chairman; Loren R. Rohr, Vice Chairman

1. Committee on Distinguished Service Certificates—J. Scott Heatherington, Chairman; Lydia T. Jordan, J. Edward Sommers

2. Committee on Ethics—Wesley B. Larsen (1964), Chairman (1960-61); J. Edward Sommers (1964), W. S. Horn (1961), John W. Hayes (1962), Isadore Siegel (1963)

3. Committee on Membership—John W. Hayes, Chairman; Jean F. LeRoque, James H. McCormick, William S. Spaeth

4. Committee on Veterans Affairs—Robert E. Morgan, Chairman; Earl K. Lyons, John J. Covolus, Kenneth H. Moody, Nicholas Latkovic

5. Committee on Constitution and By-Laws—J. Scott Heatherington, Chairman; J. Mancil Fish, W. S. Horn, Marion E. Coy, Arnold Melnick

6. Committee on A.O.A. Publications—Wesley B. Larsen, Chairman; Hobert C. Moore, William B. Strong

D. Bureau of Conventions—True B. Eveleth, Chairman; Mr. Walter A. Suberg, Vice Chairman

1. Committee on Program—Ward E. Perrin (1961), Chairman; Margaret H. Raffa (1961), W. Clemens Andreen (1962), Charles L. Ballinger (1962), Arnold Melnick (1963), P. J. MacGregor, Jr. (1963)

2. Committee on A. T. Still Memorial Lecture—Wallace M. Pearson, Chairman; J. Mancil Fish, Loren R. Rohr

3. Committee on Convention Scientific Exhibit—Wilbur V. Cole (1962), Chairman; Ward E. Perrin, Mr. Walter A. Suberg

II. DEPARTMENT OF PUBLIC AFFAIRS
Russell M. Husted, Chairman

A. Bureau of Public Education on Health—Eugene D. Mosier (1963), Chairman (1960-61); Joseph A. Walker (1962), Vice Chairman (1960-61); E. C. Goblirsch (1963), C. Fred Peckham (1962), J. Edward Sommers (1961), Elmer C. Baum (1961)

B. Bureau of Public and Industrial Health—Robert D. Anderson (1961), Chairman (1960-61); Theodore F. Classen (1964), Vice Chairman (1960-61); John M. Andrews (1965), Joseph H. Huff (1963), Earl K. Lyons (1962)

1. Committee on Medical Care Plans—Theodore F. Classen, Chairman; W. C. Andreen, James H. McCormick, A. A. Ferris

2. National Committee on Health Care for the Aging—Vernon H. Casner, Chairman; Richard S. Koch, William B. Strong, A. R. Fuller

III. DEPARTMENT OF BUSINESS AFFAIRS
Charles L. Naylor, Chairman
True B. Eveleth, Vice Chairman

A. Bureau of Finance—George W. Northup, Chairman; Galen S. Young, Roy J. Harvey, Charles L. Naylor, Ira C. Rumney, Russell M. Husted. Consultants: True B. Eveleth, Mr. Kenneth L. Ettenson, Mr. W. A. Suberg

B. Bureau of Insurance—John W. Mulford (1963), Chairman (1960-61); Donald M. Donisthorpe (1964), George W. Northup (1962), Raymond A. Gadowski (1961)

1. Committee on Professional Retirement Plans—(To be appointed)

IV. COUNCIL ON FEDERAL HEALTH PROGRAMS
Chester D. Swope (1960), Chairman to September 1, 1960; Carl E. Morrison (1963), Chairman (1960-61); E. A. Ward (1961), Galen S. Young (1962), Charles W. Sauter, II (1963), Eugene D. Mosier (1961)

V. COUNCIL ON DEVELOPMENT
William B. Strong (1962), Chairman (1960-61); Vice Chairman (to be selected); J. Scott Heatherington (1963), Mr. Wm. S. Konold (1963), Mrs. Viola Cozma (1962), R. N. MacBain (1961). Consultants: Charles L. Naylor, Charles W. Sauter, II, Earl K. Lyons, Selected members of Central Office Staff

VI AD HOC COMMITTEES

A. Conference Committee—Otterbein Dressler, Chairman; Carl E. Morrison, Charles W. Sauter, II, George W. Northup, Robert D. McCullough, Roy J. Harvey. Consultants: True B. Eveleth, Charles L. Naylor, Galen S. Young, Mr. Milton McKay

B. Osteopathic Progress Fund Committee—Earl K. Lyons, Chairman; Richard A. Payne, Vice Chairman; Merlyn McLaughlin, Ph.D., Mrs. Virgil L. Sharp, Henry N. Hillard

C. Committee on Mead Johnson Grants—John W. Mulford (1962), Chairman (1960-61); James H. McCormick (1963), Paul van B. Allen (1961). Consultant: Mr. Lawrence W. Mills

D. Joint House-Board Committee on Manual of Procedure—Lydia T. Jordan, Chairman; Louise Astell, Vice Chairman; Herbert L. Sanders, James A. Dillon, John Q. A. Mattern

E. Committee on A.O.A. Organizational Structure—J. Mancil Fish, Chairman; Campbell A. Ward, Wallace M. Pearson, W. S. Horn

F. Committee on Expansion of Central Office Facilities—Carl E. Morrison, Chairman; Campbell A. Ward, Charles L. Naylor

G. Committee on Clinical Study—Allan A. Eggleston, Chairman; Wesley B. Larsen, Stephen M. Pugh

H. Committee on Disaster Medical Care—Raymond W. Hanna, Chairman. Regional Chairmen: W. Hadley Hoyt, Robert J. Kromer, Walter B. Elliott, Arthur H. Witthohn, J. Warren McCorkle, Ronald K. Woods, Wilmot F. Robinson, Vernon J. Reagles

Advisor to Auxiliary to A.O.A.—George W. Northup

Representatives to National Health Council—True B. Eveleth, Agency Executive. Delegates: Galen S. Young, George W. Northup, Robert D. McCullough. Joseph H. Huff, Member, National Advisory Committee on Local Health Departments. J. Marshall Hoag, Member, Committee on Health Education. Leonard V. Strong, Member, Committee on Research. Charles W. Sauter, II, Member, Committee on State and Local Health Councils

Representatives to White House Conference on Aging—Vincent P. Carroll, Member, National Advisory Committee. Delegates: Alexander Levitt, Roy J. Harvey

Affiliated Organizations

(As of Aug. 1, 1960. Date of latest election is indicated in parentheses)

Nonpractice Organizations:

AMERICAN ASSOCIATION OF OSTEOPATHIC COLLEGES (July)—*President* Mr. Joseph M. Peach; *Vice President* Richard N. MacBain; *Secretary-Treasurer* J. S. Denslow, Kirksville College of Osteopathy and Surgery, Kirksville, Mo.

AMERICAN ASSOCIATION OF OSTEOPATHIC EXAMINERS (February)—*President* R. H. Peterson; *Vice President* Richard C. Baker; *Secretary-Treasurer* Wallace F. Kreighbaum, 2748 Hennepin Ave., Minneapolis 8, Minn.

AMERICAN COLLEGE OF OSTEOPATHIC HOSPITAL ADMINISTRATORS (October)—*President* Mr. Karl Greenlee; *Vice President* Mr. George Fuller, Jr.; *Secretary-Treasurer* Miss Lorene Reed, Community Memorial Hospital, 3119 Grand Ave., Moberly, Mo.

AMERICAN OSTEOPATHIC FOUNDATION (July)—*President* Wesley B. Larsen; *Vice President* Martin C. Beilke; *Treasurer* Mr. Kenneth L. Ettenson; *Secretary* True B. Eveleth, 212 E. Ohio St., Chicago 11, Ill.

AMERICAN OSTEOPATHIC GOLF ASSOCIATION (July)—*President* Everett E. Harris; *Secretary-Treasurer* J. Vincent Murphy, 11511 S. Saginaw Rd., Grand Blanc, Mich.

AMERICAN OSTEOPATHIC HISTORICAL SOCIETY (July)—*President* C. D. Ogilvie; *Vice President* Munish Feinberg; *Secretary-Treasurer* Miss Josephine Seyl, 212 E. Ohio St., Chicago 11, Ill.

AMERICAN OSTEOPATHIC HOSPITAL ASSOCIATION (October)—*President* Mr. David W. Lawrence; *President-Elect* Mr. John C. Zemke; *First Vice President* Mr. Louis S. Taylor; *Second Vice President* Mr. Karl Greenlee; *Secretary-Treasurer* Mr. Philip J. Vicari; *Executive Secretary* Mr. Emil Herbert, 4000 Brady St., Davenport, Iowa

ASSOCIATION OF OSTEOPATHIC PUBLICATIONS (July)—*President* C. Fred Peckham; *Vice President* Mr. Floyde E. Brooker; *Secretary-Treasurer* Miss Josephine Seyl, 212 E. Ohio St., Chicago 11, Ill.

AUXILIARY TO THE AMERICAN OSTEOPATHIC ASSOCIATION (July)—*President* Mrs. Campbell A. Ward; *President-Elect* Mrs. William B. Strong; *First Vice President* Mrs. Richard O. Brennan; *Second Vice President* Mrs. M. E. Coy; *Treasurer* Mrs. Richard N. Sheppard; *Recording Secretary* Mrs. George F. Marjan, 12600 Harold Ave., Palos Heights, Ill.

GAVEL CLUB (July)—*President* Vincent P. Carroll; *Secretary-Treasurer* Robert B. Thomas, 826-27 First Huntington Nat'l Bank Bldg., Huntington 1, W.Va.

NATIONAL BOARD OF EXAMINERS FOR OSTEOPATHIC PHYSICIANS AND SURGEONS (July)—*President* S. V. Robuck; *Vice President* Spencer G. Bradford; *Secretary-Treasurer* Paul van B. Allen, 4425 N. Meridian St., Indianapolis 8, Ind. (Board address)

NATIONAL OSTEOPATHIC FOUNDATION, THE (July)—*President* Galen S. Young; *Vice President* Wesley B. Larsen; *Treasurer* Mr. Kenneth L. Ettenson; *Secretary* True B. Eveleth, 212 E. Ohio St., Chicago 11, Ill.

NATIONAL OSTEOPATHIC INTERFRATERNITY COUNCIL (July)—*President* Marion Edmund Coy; *Vice President* Philip E. Haviland; *Executive Secretary-Treasurer* Esther Smoot, Osteopathic Hospital of Kansas City, 926 E. 11th St., Kansas City 6, Mo.

OSTEOPATHIC LIBRARIES ASSOCIATION (May)—*President* Miss Margaret Cressaty; *Vice President* Mrs. Katherine Becker; *Secretary-Treasurer* Mrs. Mary Beth Wimp, Kirksville College of Osteopathy and Surgery, Kirksville, Mo.

OSTEOPATHIC TRUST (No meeting-holdover officers)—*Chairman* Hobert C. Moore; *Treasurer* Mr. Kenneth L. Ettenson; *Secretary* True B. Eveleth, 212 E. Ohio St., Chicago 11, Ill.

OSTEOPATHIC VOCATIONAL GROUP OF ROTARY INTERNATIONAL (July)—*President* Chester D. Swope; *Vice President* Robert H. Lorenz; *Secretary-Treasurer* Charles W. Sauter, II, 87 S. Main St., Gardner, Mass.

SOCIETY OF DIVISIONAL SECRETARIES (July)—*President* Phil R. Russell; *Vice President* Mr. Barton K. Johns; *Secretary-Treasurer* Mr. Thomas M. Fogarty, 1941 Market St., Harrisburg, Pa.

STILL, A. T., OSTEOPATHIC FOUNDATION AND RESEARCH INSTITUTE (No meeting-holdover officers)—*Chairman* George W. Northup; *Secretary* True B. Eveleth, 212 E. Ohio St., Chicago 11, Ill.

Specialty and Other Practice Organizations:

ACADEMY OF APPLIED OSTEOPATHY (July)—*President* Stephen M. Pugh; *President-Elect* R. McFarlane Tilley; *Treasurer* Omar C. Latimer; *Secretary* Margaret W. Barnes, P.O. Bin 1050, Carmel, Calif.

AMERICAN COLLEGE OF GENERAL PRACTITIONERS IN OSTEOPATHIC MEDICINE AND SURGERY (November)—*President* Richard O. Brennan; *President-Elect* George Elanjian; *Vice President (Pacific)* Russell Peterson; *Vice President (Central)* Otto Keith Pauley; *Vice President (Western)* Jean F. LeRoque; *Vice President (Atlantic)* James E. Chastney; *Treasurer* Hugh S. Pickering; *Executive Secretary* Alfred J. Schramm, 5880 San Vicente Blvd., Los Angeles 19, Calif.

AMERICAN COLLEGE OF NEUROPSYCHIATRISTS (July)—*President* Andrew T. Still; *President-Elect* Harold E. Higley; *Vice President* George H. Guest; *Secretary-Treasurer* Don C. Littlefield, 4320 Atlantic Ave., Long Beach 7, Calif.

AMERICAN COLLEGE OF OSTEOPATHIC INTERNISTS (September)—*President* Ward E. Perrin; *Vice President* H. Earle Beasley; *Secretary-Treasurer* Glennard E. Lahrson, 400 40th St., Oakland 9, Calif.

AMERICAN COLLEGE OF OSTEOPATHIC OBSTETRICIANS AND GYNECOLOGISTS (February)—*President* Frank E. Gruber; *President-Elect* David B. Percival; *Vice President* Jordan M. Phillips; *Secretary-Treasurer* Arthur A. Speir, Box 66, Merrill, Mich.

AMERICAN COLLEGE OF OSTEOPATHIC PEDIATRICIANS (February)—*President* Harold H. Finkel; *President-Elect* Nelson D. King; *Vice President* Robert Magrill; *Secretary-Treasurer* Martyn E. Richardson, 9553 Lackland Rd., St. Louis 14, Mo.

AMERICAN COLLEGE OF OSTEOPATHIC SURGEONS (October)—*President* Milton V. Gafney; *President-Elect* Ernest G. Bashor; *Vice President* Harold J. McAnally; *Secretary-Treasurer* Charles L. Ballinger; *Executive Secretary* Mrs. Esther F. Martin, Box 488, Coral Gables 34, Fla.

AMERICAN OSTEOPATHIC ACADEMY OF GERIATRICS (July)—*President* E. H. McKenna; *Vice President* George W. Northup; *Secretary-Treasurer* John K. Johnson, Jr., Johnson Osteopathic Clinic, West on Lincoln Hi-Way, Jefferson, Iowa

AMERICAN OSTEOPATHIC ACADEMY OF OCCUPATIONAL MEDICINE (June 1959)—*President* Don M. Donisthorpe; *President-Elect* James A. Bird; *Secretary-Treasurer* Walter W. Henry, 9723 E. Rush St., El Monte, Calif.

AMERICAN OSTEOPATHIC ACADEMY OF ORTHOPEDICS (October)—*President* Robert O. Fagen; *First Vice President* Arnold Gerber; *Second Vice President* Chester H. Lyon; *Third Vice President* Hooker N. Tospon; *Secretary-Treasurer* J. Paul Leonard, 2673 W. Grand Blvd., Detroit 8, Mich.

AMERICAN OSTEOPATHIC COLLEGE OF ANESTHESIOLOGISTS (October)—*President* John S. Stratton; *President-Elect* Robert L. Thomas; *Vice President* Claire E. Pike; *Secretary-Treasurer* Crawford M. Esterline, Box 155, Kirksville, Mo.

AMERICAN OSTEOPATHIC COLLEGE OF DERMATOLOGY (July)—*President* E. H. Gabriel; *President-Elect* Paul E. Courtney; *Vice President* Harry B. Elmets; *Secretary-Treasurer* Sidney D. Rothman, 8006 Sunset Blvd., Los Angeles 46, Calif.

AMERICAN OSTEOPATHIC COLLEGE OF PATHOLOGISTS (July)—*President* Norman W. Arends; *President-Elect* Arthur L. Wickens; *Vice President* Francis S. Buck; *Secretary-Treasurer* George E. Himes, Flint Osteopathic Hospital, 416 W. Fourth Ave., Flint 3, Mich.

AMERICAN OSTEOPATHIC COLLEGE OF PHYSICAL MEDICINE AND REHABILITATION (July)—*President* Thomas D. Webber; *President-Elect* William H. McGill; *Secretary-Treasurer* John A. Schuck, Los Angeles County Osteopathic Hospital, 1100 N. Mission Rd., Los Angeles 33, Calif.

AMERICAN OSTEOPATHIC COLLEGE OF PROCTOLOGY (April)—*President* Lester J. Vick; *President-Elect* Joseph S. Lefler; *Vice President* George M. Richardson; *Secretary-Treasurer* Eugene W. Egle, Lackland Clinic, 2335 Brown Rd., St. Louis 14, Mo.

AMERICAN OSTEOPATHIC COLLEGE OF RADIOLOGY (October)—*President* Arthur H. Witthohn; *President-Elect* Wesley V. Boudette; *Vice President* Clyde C. Henry; *Secretary-Treasurer* F. A. Turfler, Jr., South Bend Osteopathic Hospital, 2515 E. Jefferson Blvd., South Bend 15, Ind.

AMERICAN OSTEOPATHIC SOCIETY OF RHEUMATOLOGY (No meeting-holdover officers)—*President* Richard A. Schaub; *Vice President* Hermon H. Schlossberg; *Secretary-Treasurer* Thomas Leland Riley, 455 E. Washington St., Pasadena, Calif.

OSTEOPATHIC COLLEGE OF OPHTHALMOLOGY AND OTORHINOLARYNGOLOGY (September)—*President* J. Walter Larkin; *President-Elect* Ralph M. Connell; *Vice President* D. W. Streitenberger; *Executive Secretary-Treasurer* Arthur A. Martin, Box 222, Kirksville, Mo.

Boards of Specialty Certification

(As of Aug. 1, 1960. Date of latest election is indicated in parentheses)

AMERICAN OSTEOPATHIC BOARD OF ANESTHESIOLOGY (October)—*Chairman* K. George Tomajan; *Vice Chairman* J. Calvin Geddes; *Secretary-Treasurer* J. Craig Walsh; *Corresponding Secretary* Mrs. Esther F. Martin, Box 488, Coral Gables 34, Fla.; *Members* Mahlon Ponitz, Claire E. Pike, J. Maurice Howlett, Crawford M. Esterline

AMERICAN OSTEOPATHIC BOARD OF DERMATOLOGY (July)—*Chairman* Walter L. Willis; *Vice Chairman* A. P. Ulbrich; *Secretary-Treasurer* Sidney D. Rothman, 8006 Sunset Blvd., Los Angeles 46, Calif.; *Members* Harry B. Elmets, Anthony E. Scardino

AMERICAN OSTEOPATHIC BOARD OF INTERNAL MEDICINE (September)—*Chairman* Neil R. Kitchen; *Vice Chairman* John L. Crowther; *Secretary-Treasurer* Glennard E. Lahrson, 400 40th St., Oakland 9, Calif.; *Members* Maxwell R. Brothers, G. A. Whetstine, Earl F. Riceman, Charles M. Worrell, Basil Harris, Stuart F. Harkness

AMERICAN OSTEOPATHIC BOARD OF NEUROLOGY AND PSYCHIATRY (July)—*Chairman* K. Grosvenor Bailey; *Vice Chairman* Cecil Harris; *Secretary-Treasurer* Floyd E. Dunn, Osteopathic Hospital of Kansas City, 926 E. 11th St., Kansas City 6, Mo.; *Members* Thomas J. Meyers, Donald E. Pinder

AMERICAN OSTEOPATHIC BOARD OF OBSTETRICS AND GYNECOLOGY (July)—*Chairman* Dorothy J. Marsh; *Vice Chairman* Frank E Gruber; *Secretary-Treasurer* Jacquelin Bryson, 3300 E. 17th Ave., Denver 6, Colo.; *Members* Homer R. Sprague, Arthur B. Funnell, Charles J. Mount, III, A. J. Still, James G. Matthews, Jr., Kenneth A. Scott

AMERICAN OSTEOPATHIC BOARD OF OPHTHALMOLOGY AND OTORHINOLARYNGOLOGY (September)—*Chairman* Clarence M. Mayberry; *Vice Chairman* C. L. Attebery; *Secretary-Treasurer* Ralph S. Licklider; *Executive Secretary* Clifford C. Foster, Detroit Gladys Clinical Bldg., 1388 Gladys Ave., Lakewood 7, Ohio; *Members* J. Ernest Leuzinger, Richard J. Murphy, Ward C. DeWitt

AMERICAN OSTEOPATHIC BOARD OF PATHOLOGY (July)—*Chairman* Norman W. Arends; *Vice Chairman* W. Harriett Davis; *Secretary-Treasurer* O. Edwin Owen, Youngstown Osteopathic Hospital, 1319 Florencedale Ave., Youngstown 4, Ohio; *Members* Boyd B. Button, George E. Miller, George E. Himes

AMERICAN OSTEOPATHIC BOARD OF PEDIATRICS (February)—*Chairman* William S. Spaeth; *Vice Chairman* Patrick D. Philben; *Secretary-Treasurer* Betsy B. MacCracken, 1721 Griffin Ave., Los Angeles 31, Calif.; *Members* Nelson D. King, Thomas Santucci

AMERICAN OSTEOPATHIC BOARD OF PHYSICAL MEDICINE AND REHABILITATION (July)—*Chairman* Harvey S. Taylor; *Vice Chairman* Wallace M. Pearson; *Secretary-Treasurer* Robert C. Ruenitz, 3122 W. Vernon Ave., Los Angeles 8, Calif.

AMERICAN OSTEOPATHIC BOARD OF PROCTOLOGY (April)—*Chairman* Lester I. Tavel; *Vice Chairman* Arden M. Price; *Secretary-Treasurer* Carlton M. Noll, 105 Jefferson St., Blissfield, Mich.; *Members* William H. Behringer, Jr., Thomas B. Powell

AMERICAN OSTEOPATHIC BOARD OF RADIOLOGY (October)—*Chairman* Theodore C. Hobbs; *Vice Chairman* George W. Rea; *Secretary-Treasurer* John W. Tedrick, Rocky Mountain Osteopathic Hospital, 4701 E. Ninth Ave., Denver 20, Colo.; *Assistant Secretary-Treasurer* D. W. Hendrickson; *Members* Charles J. Karibo, Kenneth L. Wheeler, Hervey S. Scott, James N. Fox, Paul T. Lloyd

AMERICAN OSTEOPATHIC BOARD OF SURGERY (July)—*Chairman* James M. Eaton; *Vice Chairman* Arthur M. Flack, Jr.; *Secretary-Treasurer* Charles L. Ballinger; *Corresponding Secretary* Mrs. Esther F. Martin, Box 488, Coral Gables, Fla.; *Members* Paul R. Koogler, Howard A. Graney, Ernest G. Bashor, J. Natcher Stewart, Leo R. Conley, Robert F. McBratney

Fraternities and Sororities

(As of Aug. 1, 1960. Date of latest election is indicated in parentheses)

ACACIA CLUB (No meeting-holdover officers)—*President* A. L. Stockebrand; *Secretary-Treasurer* Robert F. Purinton, Ottawa Arthritis Osteopathic Hospital & Diagnostic Clinic, 900 E. Center St., Ottawa, Ill.

ALPHA TAU SIGMA (July)—*President* Marion E. Coy; *Vice President* Vincent P. Carroll; *Secretary-Treasurer* R. H. Peterson, 324-28 Hamilton Bldg., Wichita Falls, Tex.

ATLAS CLUB (July)—*President* Philip E. Haviland; *President-Elect* Allan A. Eggleston; *Secretary-Treasurer* C. Robert Starks, 1459 Ogden St., Denver 18, Colo.

AXIS (July)—*President* Marjorie Olwen Gutensohn; *Vice President* Pattie J. Bricker; *Treasurer* Mary Lou Logan; *Secretary* Lydia Tueckes Jordan, P.O. Box 1105, Davenport, Iowa

DELTA OMEGA (July)—*President* Rosamond Pocock; *Vice President* R. Eleanor Sterrett Roberts; *Treasurer* Roberta E. Mies; Secretary Josephine Insley Worley, Hyde Park Hotel, 36th and Broadway, Kansas City 11, Mo.

IOTA TAU SIGMA (July)—*President* James F. Gipe; *Vice President* Herbert Templeman; *Secretary* A. Leon Sikkenga, 710 Florida Bank Bldg., Orlando, Fla.; *Executive Secretary-Treasurer* Wilson P. Bailey, 1707 Baird St., Kirksville, Mo.

LAMBDA OMICRON GAMMA (July)—*President* Jerome H. Kohn; *President-Elect* Seymour Ulansey; *Vice President* Albert G. Zukerman; *Treasurer* Simon Schroeder; *Recording Secretary* Alvin Rosen; *Corresponding Secretary* Clarence W. Horowitz, 1825 E. Century Blvd., Los Angeles 2, Calif.

PHI SIGMA GAMMA (July)—*President* Harold W. Witt; *Vice President* J. Vincent Murphy; *Executive Secretary-Treasurer* Stan J. Sulkowski, 1601 Belmont Ave., Kansas City 26, Mo.

PSI SIGMA ALPHA (July)—*President* Robert C. Fulford; *First Vice President* Raymond A. Gadowski; *Second Vice President* James A. Keller; *Executive Secretary-Treasurer* John W. Hayes, 203 W. Fifth St., East Liverpool, Ohio

SIGMA SIGMA PHI (July)—*President* K. Grosvenor Bailey; *Vice President* Burton E. Poundstone; *Secretary-Treasurer* S. V. Robuck, 25 E. Washington St., Chicago 2, Ill.

THETA PSI (July)—*President* Felix D. Swope; *Secretary-Treasurer* Edward M. Roberts, Queen City, Mo.

Alumni Associations

(As of Aug. 1, 1960. Date of latest election is indicated in parentheses)

CHICAGO COLLEGE OF OSTEOPATHY (July)—*President* W. B. Carnegie; *President-Elect* Wallace S. Willman; *Secretary-Treasurer* Ward E. Perrin, Chicago Osteopathic Hospital, 5250 S. Ellis Ave., Chicago 15, Ill.

COLLEGE OF OSTEOPATHIC MEDICINE AND SURGERY (July)—*President* W. Clemens Andreen; *President-Elect* J. R. Forbes; *Vice President* O. O. Wentling; *Secretary-Treasurer* Mr. Wendell R. Fuller, College of Osteopathic Medicine and Surgery, 722 Sixth Ave., Des Moines 9, Iowa

COLLEGE OF OSTEOPATHIC PHYSICIANS AND SURGEONS (May)—*President* James Cyril Brown; *President-Elect* James C. Robuck; *First Vice President* Joseph P. Linden, Jr.; *Second Vice President* Frank H. Martin; *Third Vice President* Orville Jack Davis; *Secretary-Treasurer* Nancy J. Harding; *Executive Secretary* Mr. Richard D. Croft, 1721 Griffin Ave., Los Angeles 31, Calif.

KANSAS CITY COLLEGE OF OSTEOPATHY AND SURGERY (April)—*President* H. Vard Nelson; *President-Elect* V. L. Jennings; *Vice President* S. Riley King; *Executive Secretary-Treasurer* Harold W. Witt, Osteopathic Hospital of Kansas City, 926 E. 11th St., Kansas City 6, Mo.

KIRKSVILLE COLLEGE OF OSTEOPATHY AND SURGERY (July)—*President* Paul E. Wilson; *President-Elect* George J. Luibel; *First Vice President* Marion E. Coy; *Second Vice President* Louise W. Astell; *Treasurer* Mr. Louis W. Handley; *Executive Secretary* Mr. Lewis F. Chapman, Kirksville College of Osteopathy and Surgery, Kirksville, Mo.

PHILADELPHIA COLLEGE OF OSTEOPATHY (July)—*President* George S. Rothmeyer; *President-Elect* Boyd B. Button; *Vice President* George B. Stineman; *Treasurer* Charles A. Hemmer; *Secretary* Robert D. Anderson, 6514 Lincoln Dr., Philadelphia 19, Pa.

Officials of State and Provincial Licensing Boards *(and Osteopathic Members of Composite Boards)*

	Name and Address
•Alabama	§D. G. Gill, M.D., State Office Bldg., Montgomery 4
•Alaska	§D. M. Whitehead, M.D., Box 140, Juneau
‡Arizona	§Russell Peterson, D.O., 2747 E. McDowell Rd., Phoenix 22
‡Arkansas	§E. M. Sparling, D.O., 222 Thompson Bldg., Hot Springs Natl. Pk.
‡California	§Glen D. Cayler, D.O., 1013 Forum Bldg., Sacramento 14 (board address)
†Colorado	§Mary M. McConnell, 715 Republic Bldg., Denver 2 (Executive Secretary) ••C. C. Thorpe, D.O., 500 Ninth Ave., Longmont ••C. Robert Starks, D.O., 1459 Ogden St., Denver 18
‡Connecticut	§Frank Poglitsch, D.O., 300 Main St., New Britain Medical Examining Board in Surgery: §Creighton Barker, M.D., 160 St. Ronan St., New Haven
•Delaware	§Joseph S. McDaniel, M.D., Professional Bldg., Dover
†District of Columbia	*Address communications to:* Paul Foley, Deputy Director, Dept. of Occupations and Professions, 1740 Massachusetts Ave., N.W., Washington 6 ••Chester D. Swope, D.O., Farragut Medical Bldg., Washington 6
‡Florida	§Thomas F. Sheffer, D.O., Las Olas Hospital, 1516 E. Las Olas Blvd., Ft. Lauderdale
‡Georgia	*Address communications to:* C. L. Clifton, Joint Secretary, State Examining Boards, 224 State Capitol, Atlanta
‡Hawaii	§Richard Y. Kodama, D.O., 826 Keeaumoku St., Honolulu 14
‡Idaho	Susan B. Kerr, D.O., McCall *Address communications to:* Nan K. Wood, Director, Occupational License Bureau, Dept. of Law Enforcement, State House, Boise
†Illinois	*Address communications to:* Frederic B. Selcke, Superintendent of Registration, Illinois Dept. of Registration and Education, Capitol Bldg., Springfield ••Ransom L. Dinges, D.O., Orangeville
†Indiana	§Ruth V. Kirk, 538 K. of P. Bldg., Indianapolis 4 (Executive Secretary) ••H. Dearing Wolf, D.O., 809-13 Odd Fellows Bldg., Indianapolis 4
‡Iowa	§W. S. Edmund, D.O., 621 Third St., Red Oak *Address communications to:* Herman W. Walter, Asst. Secretary, 519-20 Insurance Exchange Bldg., Des Moines (central office)
†Kansas	§Francis J. Nash, M.D., New Brotherhood Bldg., Kansas City ••Stanley E. Davis, D.O., 600 W. Maple St., Columbus ••Richard Gibson, D.O., Osteopathic Clinic, 1404 Main St., Winfield ••James B. Donley, D.O., Donley Osteopathic Hospital, 437 N. Cedar St., Kingman
†Kentucky	§Russell E. Teague, M.D., 275 E. Main St., Frankfort ••Edmund H. Bouton, D.O., 210 W. Main St., Frankfort
‡Louisiana	§Carl E. Warden, D.O., 827 Hodges St., Lake Charles
‡Maine	§George Frederick Noel, D.O., 20 Monument Sq., Dover-Foxcroft
‡Maryland	§Christopher L. Ginn, D.O., 19 W. Mulberry St., Baltimore 1
†Massachusetts	§David W. Wallwork, M.D., Room 37, State House, Boston 33 ••Robert R. Brown, D.O., 64 Trapelo Rd., Belmont 78
‡Michigan	§Roy G. Bubeck, Jr., D.O., 2851 Clyde Park Ave., S.W., Grand Rapids 9
‡Minnesota	§Clifford F. Dartt, D.O., 318 Bush St., Red Wing
•Mississippi	§Archie Lee Gray, M.D., Box 1700, Jackson
†Missouri	§John A. Hailey, P.O. Box No. 4, Jefferson City ••Richard A. Michael, D.O., 420 E. High St., Jefferson City ••R. W. Matheny, D.O., 812 Clay St., Chillicothe
‡Montana	§Warren E. Monger, D.O., Box 64, Dillon
‡Nebraska	§Donald O. Brown, D.O., 1218 N St., Auburn *Address communications to:* R. K. Kirkman, Director, Bureau of Examining Boards, State Dept. of Health, Lincoln 9
‡Nevada	§John H. Pasek, D.O., 205-10 First Natl. Bank Bldg., Minden
•New Hampshire	§Edward W. Colby, M.D., State House, Concord
†New Jersey	§Royal A. Schaaf, M.D., Room 1407, 28 W. State St., Trenton 8 *Address communications to:* Michael E. H. Sweeney, Administrative Secretary, 28 W. State St., Trenton 8 ••Edwin T. Ferren, D.O., 2707 Westfield Ave., Camden 5

	Name and Address
‡New Mexico	§L. D. Barbour, D.O., Roswell Osteopathic Hospital, Roswell
†New York	§Stiles D. Ezell, M.D., Bureau of Professional Examinations and Registrations, 23 S. Pearl St., Albany 7 ••John R. Pike, D.O., 90 State St., Albany 7
‡North Carolina	§Joseph H. Huff, D.O., 330 W. Front St., Box 1177, Burlington
‡North Dakota	§M. J. Hydeman, D.O., 417½ Broadway, Bismarck
†Ohio	§H. M. Platter, M.D., 21 W. Broad St., Columbus 15 ••James O. Watson, D.O., 111 W. Third Ave., Columbus 1
‡Oklahoma	§G. R. Thomas, D.O., 2923 N. Walker, Oklahoma City 3
†Oregon	§Howard I. Bobbitt, 609 Failing Bldg., Portland 4 (Executive Secretary) ••David E. Reid, D.O., P.O. Box 277, Lebanon
‡‡‡Pennsylvania	§Katherine M. Wollet, Bureau of Professional Licensing, Harrisburg
•Puerto Rico	§Joaquin Mercado Cruz, c/o Dept. of State, Box 3271, San Juan
†Rhode Island	••§J. Francis Crowley, D.O., 654 Main St., Pawtucket ••Frederick S. Lenz, D.O., 1141 Narragansett Blvd., Cranston 5 *Address communications to:* Thomas B. Casey, Administrator of Professional Regulation, 366 State Office Bldg., Providence
‡South Carolina	§Ernest A. Johnson, D.O., Box 525, Summerville
†South Dakota	§John C. Foster, Room 300, First National Bank Bldg., Sioux Falls (Executive Secretary) ••Lawrence L. Massa, D.O., 981 E. Main St., Sturgis
‡Tennessee	§M. E. Coy, D.O., 1226 Highland Ave., Jackson
†Texas	§M. H. Crabb, M.D., 1714 Medical Arts Bldg., Ft. Worth 2 ••Howard R. Coats, D.O., Coats-Brown Clinic and Hospital, 615 S. Broadway, Tyler ••R. H. Peterson, D.O., 324 Hamilton Bldg., Wichita Falls ••G. G. Porter, D.O., 2401 19th St., Lubbock
‡Utah	§Clarence E. Hyatt, D.O., 144 E. Fifth North St., Provo *Address communications to:* Frank E. Lees, Director, Registration Division, Dept. of Business Regulation, State Capitol, Salt Lake City 14
‡Vermont	§Charles D. Beale, D.O., Mead Bldg., Rutland
†Virginia	§K. D. Graves, M.D., 631 First St., S.W., Roanoke ••Felix D. Swope, D.O., 216 Virginia Ave., Alexandria
‡‡Washington	*Address communications to:* Thomas A. Carter, Secretary, Professional Division, Dept. of Licenses, Olympia •••S. M. Pugh, D.O., 3010 Hoyt Ave., Everett •••Ernest E. Williamson, D.O., 423 Third Ave., Moses Lake •••C. W. Roehr, D.O., 13014 12th Ave., S.W., Seattle 66
‡West Virginia	§Donald C. Newell, D.O., 137½ Main St., Oak Hill
†Wisconsin	§Thomas W. Tormey, Jr., M.D., Room 28, 115 S. Pinckney St., Madison 2 ••H. G. Withrow, D.O., Hustisford Hospital and Clinic, Hustisford
†Wyoming	§James W. Sampson, M.D., State Office Bldg., Cheyenne ••M. O. Fuerst, D.O., 205 S. Fourth St., Riverton
Canada	
†Alberta	§G. B. Taylor, Acting Registrar, Office of the Registrar, University of Alberta, Edmonton ••E. A. Hay-Roe, D.O., 322 Tegler Bldg., Edmonton
•British Columbia	Registrar: Lynn Gunn, M.D., 1807 W. 10th Ave., Vancouver 9
‡Manitoba	§W. Kurth, D.O., 248 Moorgate Blvd., St. James, Winnipeg 12
†††Ontario	§D. Gordon Campbell, D.O., 2 Bloor St., E., Toronto 5
†Saskatchewan	••Doris M. Tanner, D.O., 2228 Albert St., Regina ••Anna E. Northup-Little, D.O., 2228 Albert St, Regina

•M.D. Board
••Osteopathic Member
•••Member, Osteopathic Examining Committee
†Composite Board
††Osteopathic Examiner
†††Board of Directors of Osteopathy under Drugless Practitioners Act
‡Osteopathic Board
‡‡Osteopathic Examining Committee
‡‡‡Five D.O.'s, two M.D.'s, and Superintendent of Public Instruction
§Secretary

Divisional Societies' Presidents and Secretaries

As of August 1, 1960

Divisional Society	*Latest Election*	*President*	*Secretary*
Alabama	No meeting	Meredith White, 735 First National Bank Bldg., Mobile 13	John V. Glass, 2100 Eighth Ct., S., Birmingham 5
Arizona	May	Leonard Staff, Jr., 3 E. Seventh St., Tempe	Russell Peterson, 2747 E. McDowell Rd., Phoenix 22 Executive Director: Mr. Stanley N. Schultz, Pima Plaza Bldg., Suite 213, 2030 E. Broadway, Tucson
Arkansas	May	Paul W. Lecky, 321 S. West Ave., El Dorado	R. M. Packard, 726 W. Walnut St., Rogers
California	April	Dorothy J. Marsh, 1385 E. Colorado Blvd., Glendale 5	Glenn F. Gordon, 1630 Del Valle Ave., Glendale 8 Administrative Director: Mr. J. Stuart Page, 4775 Santa Monica Blvd., Los Angeles 29
Colorado	April	A. Hollis Wolf, 304 Carlton Bldg., Colorado Springs	C. Robert Starks, 1459 Ogden St., Denver 18
Connecticut	June	William H. Cable, 9 Terrace Pl., Danbury	Charles W. Cornbrooks, Jr., 37 Corbin Dr., Darien
Delaware	June	Henry George, III, 2212 Baynard Blvd., Wilmington 2	James J. Giliberto, 2306 N. Van Buren St., Wilmington 2 Executive Secretary: Mr. James F. Moran, Riverside Hospital, Clifton Park Manor, Wilmington 2
Dist. of Columbia	May	Albert F. Dilworth, 1835 K. St., N.W., Washington 6	Laurence R. Bower, 1246 Monroe St., N.E., Washington 17
Florida	September	Wardell E. Stanfield, Dade City Hospital and Clinic, 510 E. Church Ave., Dade City	Executive Director: Mr. Barton K. Johns, 5009 Central Ave., Tampa 3
Georgia	June	Richard A. Payne, 4071 Glenwood Rd., Decatur	Alfred R. Haight, 4731 Memorial Dr., Decatur
Hawaii	November	Fred J. Cohen, c/o Isabelle Morelock, 313 Kauikeolani Bldg., Honolulu 13	Joseph M. Thomas, 1541 S. Beretania St., Honolulu 14
Idaho	June	Leland J. Anderson, 308 Eastman Bldg., Boise	Emery J. Miller, 412 15th Ave., S., Box 150, Nampa
Illinois	April	Louise W. Astell, 909 S. Elm St., Champaign	Executive Secretary: Mr. Douglas O. Durkin, Room 521, 53 W. Jackson Blvd., Chicago 4
Indiana	May	Donald R. Hinton, 206 W. Lincoln St., Nappanee	Arabelle B. Wolf, 4840 N. Michigan Rd., Indianapolis 8 (Association address)
Iowa	May	Jean F. LeRoque, 3305 S.W. Ninth St. Des Moines 15	Mr. Herman W. Walter, 519-20 Insurance Exchange Bldg., Des Moines 9
Kansas	October	Everett W. Pettit, 132 "E" Ave., S., Lyons	Executive Secretary: Mr. Lloyd L. Hall, 121 E. Eighth St., Topeka
Kentucky	June	Earl M. Little, 406 Fincastle Bldg., Louisville 2	Martha Garnett, 2829 Brownsboro Rd., Louisville 6
Louisiana	October	Thomas R. Gilchrist, 3109 Alexander, Shreveport 16	V. L. Wharton, 406-07 Weber Bldg., Lake Charles
Maine	June	Edward T. Newell, 28 Dane St., Kennebunk	Executive Director: Mr. George R. Petty, Monmouth
Maryland	October	Morris C. Augur, 901 Pershing Dr., Silver Spring	Ernest R. MacDonald, 10 W. Hamilton St., Baltimore 1
Massachusetts	January	William A. Seeglitz, 315 Franklin St., Newton 58	Robert R. Brown, 64 Trapelo Rd., Belmont 78 Executive Secretary: Mrs. Gladys M. Stockdale, 524 California St., Newtonville 60
Michigan	October	Alan M. Potts, 222 E. Sixth St., Royal Oak	Roy S. Young, 233 State St., Harbor Beach Executive Secretary: Mr. Floyde E. Brooker, 81 Glendale, Highland Park 3
Minnesota	May	William J. Donkers, Security Bank Bldg., Faribault	E. R. Komarek, 301 Granite Exchange Bldg., St. Cloud
Missouri	October	George W. Ringland, 46 N. Main St., Cape Girardeau	Executive Secretary: Mr. Paul D. Adams, 325 E. McCarty St., Jefferson City
Montana	August	Richard D. Wheaton, 135 Seventh Ave., Helena	Donald H. Schmidt, 506 26th St., N., Great Falls
Nebraska	September	Earl A. Purtzer, 2606 Broadway, Scottsbluff	Executive Secretary: Mr. Robert H. Downing, Security Nat'l Bank Bldg., Superior
Nevada	May	O. W. Shelksohn, Hotel Nevada Bldg., Box 390, Ely	Joseph P. Valeska, 139 N. Virginia St., Reno
New Hampshire	June	William L. Johnston, 913 Elm St., Manchester	Charles H. Bowles, 2 Russell St., Plymouth
New Jersey	March	Henry Palmaffy, 362 Prospect St., South Orange	James J. Riviello, 119 N. Centre St., Merchantville 8 Executive Secretary: Mr. R. P. Chapman, 1212 Stuyvesant Ave., Trenton 8
New Mexico	April	H. D. Thomas, 3200 E. Silver Ave., Albuquerque	Joseph M. Peterson, 1517 Fourth St., N.W., Albuquerque
New York	October	William E. Kaufmann, 1712 S. Salina St., Syracuse 5	C. Fred Peckham, 38 E. Bridge St., Oswego
North Carolina	October	Harvey M. Dillabough, 211 First Nat'l Bank Bldg., Winston-Salem 3	Walter C. Eldrett, 310 S. Main St., Hendersonville
North Dakota	April	Naomi Christensen, 1241 Cherry St., Grand Forks	Georgiana Pfeiffer, 110½ Broadway, Fargo
Ohio	May	Leonard D. Sells, 111 W. Third Ave., Columbus 1	Executive Secretary: Mr. William S. Konold, 53 W. Third Ave., Columbus 1
Oklahoma	November	John W. Morrow, 1222 W. Main St., Woodward	G. R. Thomas, 2923 N. Walker, Oklahoma City 3 Executive Secretary: Mr. Walter L. Gray, 820 Braniff Bldg., Oklahoma City
Oregon	June	Russell R. Sherwood, 807 E. Powell Blvd., Gresham	David E. Reid, Box 277, Lebanon
Pennsylvania	November	Henry N. Hillard, 245 E. King St., Lancaster	Robert C. Erwin, 1319 Hamilton St., Allentown Executive Secretary: Mr. Thomas M. Fogarty, 1941 Market St., Harrisburg
Rhode Island	February	Foster C. True, 1141 Narragansett Blvd., Cranston 5	Earle Travis, 5507 Post Rd., East Greenwich
South Carolina	September	Ernest A. Johnson, Box 525, Summerville	Nancy A. Hoselton, 1711 Gervais St., Columbia
South Dakota	May	Laverne P. Mills, Platte	Earl H. Hewlett, 417 W. 27th St., Sioux Falls
Tennessee	May	John Richard Jones, 8057 E. Brainerd Rd., Chattanooga 11	Paul Grayson Smith, Pikeville
Texas	April	Glenn R. Scott, 709 W. Tenth St., Amarillo	Executive Secretary: Phil R. Russell, 512 Bailey St., Fort Worth 7
Utah	June	Gerald S. Rosenthal, 88 N. First E., Logan	Clarence E. Hyatt, 144 E. Fifth North St., Provo
Vermont	September	Lincoln A. Jacobs, Box 35, Morrisville	Marian N. Rice, 8 Court St., Windsor
Virginia	May	John A. Cifala, 2778 N. Washington Blvd., Arlington	Henry S. Liebert, Jr., 3514 Grove Ave., Richmond 21

Divisional Society	*Latest Election*	*President*	*Secretary*
Washington	June	Herbert G. Bauer, 220 Securities Bldg., Seattle 1	Lon A. Hoover, 1219 Sixth Ave., Tacoma 5 Association's headquarters address: 4443 California Ave., Seattle 8
West Virginia	May	Albert Molisky, 570 Main St., Follansbee	Executive Secretary: Mr. Gilbert D. Brooks, 313 Berman Bldg., Charleston 1
Wisconsin	May	James S. Crane, 407 W. Silver Spring Dr., Milwaukee 17	V. L. Sharp, 3924 S. 51st St., Milwaukee 19
Wyoming	June	John R. Stanfield, 205 S. Broadway, Riverton	G. A. Roulston, 2823 Central Ave., Cheyenne
Australia	February	D. Cameron McGown, 67 Castlereagh St., Sydney, N.S.W.	Joan Philcox, 11 Delhi St., Bentleigh, Melbourne, S.E. 14, Victoria
British	September	Richard A. Saunders, 37 St. Paul's Rd., Bournemouth	Thurston True, Andrew Still House, 24-25 Dorset Sq., London N.W. 1 (Central office address)
British Columbia	June	Milton P. Thorpe, 1126 Vancouver Block, 736 Granville St., Vaucouver	Vernon B. Taylor, 301-03 Jones Block, Victoria
Manitoba	January	W. Kurth, 248 Moorgate Blvd., St. James, Winnipeg 12	G. Glenn Murphy, 120 Sherburn St., Winnipeg 10
Ontario	May	A. V. DeJardine, 34 Bank of Toronto Bldg., 205 Yonge St., Toronto 1	Eric B. Johnston, 2920 Bloor St., W., Toronto 18
Quebec	January	A. E. Wilkinson, 616 Medical Arts Bldg., Montreal 25	Bruce E. Marshall, 1468 Bishop St., Montreal 25
Saskatchewan	December	Anna E. Northup-Little, 2228 Albert St., Regina	Doris M. Tanner, 2228 Albert St., Regina

Osteopathic Hospitals

The following hospitals meet the minimum standards set by the American Osteopathic Association for: 1) registered or nonteaching hospitals; 2) hospitals approved for the training of interns; and 3) hospitals approved for the training of interns and residents. This approval extends from July 1, 1960, to June 30, 1961.

True B. Eveleth, D.O., Executive Director, A.O.A.

Teaching hospitals are printed in *italics*	Teaching hospitals approved for: Internships	Residencies
Allentown Osteopathic Hospital, 1736 Hamilton St., Allentown, Pa.	x	R-1; S-1*
Altadena Community Hospital, 2052 N. Lake Ave., Altadena, Calif.		
Amarillo Osteopathic Hospital, 801 W. Tenth Ave., Amarillo, Texas		
Aransas Hospital, 160 S. 13th St., Aransas Pass, Texas		
Arcade Hospital, 3201 Del Paso Blvd., North Sacramento, Calif.		
Ardmore Osteopathic Hospital, 910 Moore, S.W., Ardmore, Okla.		
Art Centre Hospital, 5435 Woodward Ave., Detroit 2, Mich.	x	A-3; I-2; OG-2; Pth-2; R-2; S-2
Audubon Hospital, 607 White Horse Pike, Audubon 6, N.J.		
Avon Center Hospital, 55 E. Avon Rd., Rochester, Mich.		
Axtell Osteopathic Hospital, 205 S. Broadway, Princeton, Mo.		
Bangor Osteopathic Hospital, 292 State St., Bangor, Maine	x	Rt-1; S-1
Barnes Osteopathic Hospital and Clinic, W. Vermont St., King City, Mo.		
Bashline Osteopathic Hospital and Clinic, Pine and Center Sts., Grove City, Pa.	x	S-2
Bay Osteopathic Hospital, 300 Mulholland St., Bay City, Mich.	x	
Bay View Hospital, 23200 W. Lake Rd., Bay Village, Ohio	x	Rtd-1; Sg-1; S-1
Bellevue Hospital and Clinic, 1115 W. Alabama, Houston 6, Texas		
Belvedere Hospital, 127 S. Utah St., Los Angeles 33, Calif.		
Big Sandy Clinic-Hospital, Gilmer St., Big Sandy, Texas		
Biscayne Osteopathic Hospital, 6337 Biscayne Blvd., Miami 38, Fla.	x	
Blackwoods-Mims Clinic and Hospital, 201 E. Grand Ave., Comanche, Texas		
Brentwood Hospital, 4110 Warrensville Center Rd., Cleveland, Ohio	x	I-1; So-1; S-1
Burbank Hospital, 466 E. Olive Ave., Burbank, Calif.	x	Rtd-1; S-1
Cafaro Memorial Hospital, 1319 Florencedale Ave., Youngstown 4, Ohio	x	
Cape Osteopathic Hospital, 105 S. Spanish St., Cape Girardeau, Mo.		
Cardwell Memorial Hospital, Stella, Mo.		
Carson City Hospital, Elm at Third, Carson City, Mich.	x	S-1
Cassville Osteopathic Hospital, 87 Gravel St., Cassville, Mo.		
Charles E. Still Osteopathic Hospital, 1201 S. Madison St., Jefferson City, Mo.	x	A-1; S-1
Chesemore Clinic and Hospital, 715 Morton St., Paris, Tenn.		
Chicago Osteopathic Hospital, 5200 S. Ellis Ave., Chicago 15, Ill.	x	A-1; I-2; OG-2; Pth-2; Ped-1; Rt-2; S-1
Civic Center Hospital, 390 40th St., Oakland, Calif.	x	

* For specialty symbols see page 80. Numerals indicate number of residencies offered.

Teaching hospitals are printed in *italics*	Teaching hospitals approved for: Internships	Residencies
Clare General Hospital, 104 W. Sixth St., Clare, Mich.	x	
Clinic Hospital, 121 S. Pine, Nowata, Okla.		
Coats-Brown Clinic and Hospital, 615 S. Broadway, Tyler, Texas		
Colorado Hospital, 602 Macon, Canon City, Colo.		
Community Hospital, 1405 Holland Ave., Houston 29, Texas	x	
Community Hospital of Los Angeles, 4081 E. Olympic Blvd., Los Angeles 23, Calif.		
Community Medical Center, 2251 Hawthorne Ave., North Sacramento, Calif.	x	
Community Memorial Hospital, 319 Grand Ave., Moberly, Mo.		
Community Memorial Hospital, 2100 Davenport, Sturgis, S. Dak.		
Corpus Christi Osteopathic Hospital, 1202 Third St., Corpus Christi, Texas	x	
Crater Osteopathic Hospital, 600 S. Second St., Central Point, Ore.		
Crews Hospital and Clinic, 307 St. Francis St., Gonzales, Texas		
Currey Clinic-Hospital, 901 N. Jefferson, Mt. Pleasant, Texas		
Dallas Osteopathic Hospital, 5003 Ross Ave., Dallas 6, Texas	x	A-1; Pth-1; S-2
Davenport Osteopathic Hospital, 1111 W. Kimberly, Davenport, Iowa	x	I-1
Delaware Valley Hospital, Wilson Ave. and Pond St., Bristol, Pa.	x	S-1
Delgado Green Cross Hospital, Box D, Ysleta Station, El Paso, Texas		
Denison Hospital and Clinic, 417 W. Woodard St., Denison, Texas		
Des Moines General Hospital, 603 E. 12th St., Des Moines 16, Iowa	x	A-2; I-1; OG-1; R-1; S-2
Detroit Osteopathic Hospital, 12523 Third Ave., Detroit 3, Mich.	x	A-6; I-8; OG-5; OO-2; So-3; Pth-4; R-4; S-8
Doctors Hospital, 1087 Dennison Ave., Columbus 1, Ohio	x	A-2; I-3; OG-1; OO-2; So-2; R-3; S-4
Doctors Hospital, 5500 39th St., Groves, Texas		
Doctors Hospital, 5815 Airline Drive, Houston 9, Texas		
Doctors Hospital, 2821 Riverside Ave., Jacksonville 5, Fla.		
Doctors Hospital, 2501 Gillham Rd., Kansas City 8, Mo.		
Doctors Hospital, 325 W. Jefferson Blvd., Los Angeles 7, Calif.	x	S-1
Doctors Hospital, 401 - 15th St. N., St. Petersburg, Fla.		
Doctors Hospital, 300 W. Call St., Starke, Fla.		
Doctors Hospital, 2160 Idlewood Rd., Tucker, Ga.		
Doctors Memorial Osteopathic Hospital, 700 E. Sunshine, Springfield, Mo.		
Doctors Osteopathic Hospital, 239 W. 10th St., Erie, Pa.	x	Rt-1
Donley Osteopathic Hospital and Clinic, 437 N. Cedar St., Kingman, Kansas		
East Liverpool Osteopathic Hospital, 332 W. 6th St., East Liverpool, Ohio		
East Town Osteopathic Hospital, 7525 Scyene Rd., Dallas 27, Texas	x	
Edgewater Hospital, 1705 N. Prospect Ave., Milwaukee 2, Wis.		
Elliston Clinic and Hospital, 707 S. Main St., Covington, Tenn.		
Elm Street Hospital and Clinic, 212 S. Elm St., Denton, Texas		
Erie Osteopathic Hospital, 234 W. Sixth St., Erie, Pa.	x	
Flint General Hospital, 765 E. Hamilton Ave., Flint 5, Mich.	x	A-1; R-1; S-1
Flint Osteopathic Hospital, 416 W. Fourth Ave., Flint 3, Mich.	x	A-2; I-2; OG-2; OO-1; Pth-2; Ped-1; R-2; S-2
Forest Hill Hospital, 924 E. 152nd St., Cleveland 10, Ohio	x	
Fort Worth Osteopathic Hospital, 1000 Montgomery St., Fort Worth 7, Texas	x	S-1
Garden City-Ridgewood Hospitals	x	A-2; Rt-2; OG-2; S-2
Garden City Hospital, 30548 Ford Rd., Garden City, Mich.		
Ridgewood Hospital, 10000 Geddes Rd., Ypsilanti, Mich.		
Gleason Hospital, 523 Main St., Larned, Kans.	x	
Glendale Community Hospital, 800 S. Adams St., Glendale 5, Calif.	x	Pth-1
Gordon Memorial Hospital, 1816 West St., Sioux City, Iowa		
Granbury General Hospital, 116 S. Houston St., Granbury, Texas		
Granby Community Hospital, 596 High St., Granby, Mo.		
Grand Rapids Osteopathic Hospital, 1919 Boston St., S.E., Grand Rapids 6, Mich.	x	OG-1; R-2; S-4
Grandview Hospital, 405 Grand Ave., Dayton 10, Ohio	x	A-3; I-3; OG-2; OO-2; So-2; Pth-2; Ped-2; R-3; S-4
Green Cross General Hospital, 1900 Twenty-third St., Cuyahoga Falls, Ohio	x	A-1; I-1; Rtd-1; S-1
Groom Osteopathic Hospital, Box 262, Groom, Texas		
Harrison Miller Memorial Hospital, 210 N. Clark, Hinton, Okla.		
Hillcrest Osteopathic Hospital, 2129 S.W. 59th St., Oklahoma City, Okla.		
Hillside Hospital, 1940 El Cajon Blvd., San Diego 4, Calif.	x	

Teaching hospitals are printed in *italics*	Teaching hospitals approved for: Internships	Residencies
Hospitals of the Kansas City College of Osteopathy and Surgery	x	A-2; I-3; Pth-3; Ped-2; Pr-1; R-2; S-3
Osteopathic Hospital, 11th and Harrison Sts., Kansas City, Mo.		
Conley Maternity Hospital, 2105 Independence Ave., Kansas City, Mo.		
Hospitals of Philadelphia College of Osteopathy	x	A-6; I-5; Sg 3; OO-2; So-1; Pth-4; Ped-2; R-5; S-5; Su-1
The Hospital of Philadelphia College of Osteopathy, 48th and Spruce Sts., Philadelphia, Pa.		
North Center Hospital of Philadelphia College of Osteopathy, 20th and Susquehanna Ave., Philadelphia, Pa.		
Houston Osteopathic Hospital, 5115 Montrose Blvd., Houston 6, Texas	x	
Humphreys Osteopathic Hospital, Tuscumbia, Mo.		
Hustisford Hospital, Juneau and Ridge Sts., Hustisford, Wis.		
Jackson Osteopathic Hospital, 121 Seymour St., Jackson, Mich.		
Joplin General Hospital, 521 W. Fourth St., Joplin, Mo.		
Juniata Park Medical Center, 1331 E. Wyoming Ave., Philadelphia, Pa.		
Kirksville Osteopathic Hospital, 800 W. Jefferson, Kirksville, Mo.	x	A-2; I-3; OO-2; Pth-2; Ped-2; Rt.-1; S-2
Lakeside Hospital, 29th and Flora, Kansas City 3, Mo.	x	Sg-1; R-1; S-2
Lakeview General Hospital, 80 N. 20th St., Battle Creek, Mich.	x	S-1
Lakeview Hospital, 1749 N. Prospect Ave., Milwaukee 2, Wis.	x	I-1; S-1
Lake Worth Osteopathic Hospital, 6613 Jacksboro Hwy., Fort Worth, Texas		
Lancaster Osteopathic Hospital, 1100 E. Orange St., Lancaster, Pa.	x	A-1; I-1; Pth-1; Rt-1; S-2
Lansing General Hospital, 2800 Devonshire, Lansing 10, Mich.	x	Pth-1
Lark Ellen Hospital, 845 N. Lark Ellen Ave., West Covina, Calif.		
Las Olas Hospital, 1516 E. Las Olas Blvd., Fort Lauderdale, Fla.		
Laughlin Hospital and Clinic, 711-715 W. Jefferson, Kirksville, Mo.	x	Rtd-1; S-2
†*Le Roy Hospital,* 40 E. 61st St., New York 21, N.Y.	x	
Lincoln Park Osteopathic Hospital, 1200 N. 12th St., Grand Junction, Colo.		
Long Beach Osteopathic Hospital-Magnolia Hospital	x	A-1; I-1; Pth-1; Rtd-1; S-1
Long Beach Osteopathic Hospital, 2776 Pacific Ave., Long Beach 6, Calif.		
Magnolia Hospital, 2101-2115 Magnolia Ave., Long Beach 6, Calif.		
Longs Peak Osteopathic Hospital, 500 Ninth Ave., Longmont, Colo.		
Los Angeles County Osteopathic Hospital, 1200 N. State St., Los Angeles 33, Calif.	x	A-6; I-14; NI-Sn-4; Sg-4; OO-4; So-4; Pth-5; Ped-5; Pm-3; R-5; S-4; Su-3
Lubbock Osteopathic Hospital, 5301 College Ave., Lubbock, Texas		
Madison Street Hospital, 1620 Eighteenth Ave., Seattle 22, Wash.	x	
Mahoning Valley Green Cross Hospital, 1320 Mahoning Ave., N.W., Warren, Ohio	x	
Manning General Hospital, 416 Main St., Manning, Iowa		
Marcom Hospital, 100 Bonham St., Ladonia, Texas		
Margaret Lyle Osteopathic Hospital, 952 Euclid Ave., Benton Harbor, Mich.		
Martin Place Hospital, 58 Martin Place, Detroit 1, Mich.		
Massachusetts Osteopathic Hospital, 222 S. Huntington Ave., Boston 30, Mass.	x	S-1
Maywood Hospital, 4400 E. Slauson Ave., Maywood, Calif.	x	OG-1
Memorial Hospital, Onekama, Mich.		
Memorial Osteopathic Hospital, 528 Morris Ave., Elizabeth 3, N.J.		
Mesa Memorial Hospital, Tenth and Grand, Grand Junction, Colo.	x	
Metropolitan Hospital, 300 Spruce St., Philadelphia 6, Pa.	x	A-2; I-3; Ot-1; Pth-3; Ped-1; R-2; S-3; Sg-2; So-1; Su-1
Miles Osteopathic Hospital, 213 E. College St., Grapevine, Texas		
Mineola General Hospital, P.O. Box 248, Mineola, Texas		
Mineral Area Osteopathic Hospital, Route One, Farmington, Mo.	x	
Monte Sano Hospital of Physicians and Surgeons, 2834 Glendale Blvd., Los Angeles 39, Calif.	x	S-1
Mount Clemens General Hospital, 1000 Harrington Blvd., Mount Clemens, Mich.	x	A-2; Rt-1; I-2; Pth-2; S-2
Mt. Pleasant Hospital and Clinic, 509 N. Madison Ave., Mt. Pleasant, Texas		
Muskegon Osteopathic Hospital, 353 W. Webster Ave., Muskegon, Mich.	x	Rtd-1
New Valley Osteopathic Hospital, 3003 Tieton Drive, Yakima, Wash.		
Normandy Osteopathic Hospital, 7840 Natural Bridge Rd., St. Louis 21, Mo.	x	A-2; Rt-1; S-2
North Jersey Osteopathic General Hospital, 2 E. Quackenbush Ave., Dumont, N.J.		

†*Dual staff*

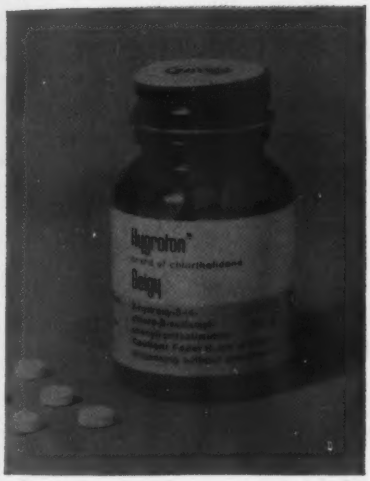
Teaching hospitals are printed in *italics*	Teaching hospitals approved for: Internships	Residencies
Northeast Osteopathic Hospital, 620 Bennington Ave., Kansas City 25, Mo.		
Northwest General Osteopathic Hospital, 8741 W. Chicago, Detroit 4, Mich.		
Northwest Hospital, 1060 N.W. 79th St., Miami 50, Fla.	x	I-1; Rtd-1; Pr-1; S-2
Oklahoma Osteopathic Hospital, 9th and 11th Sts., on Jackson Ave., Tulsa, Okla.	x	
Ontario Comunity Hospital, 555 N. Campus Ave., Ontario, Calif.	x	
Orlando Osteopathic Hospital, 603 Hillcrest Ave., Orlando, Fla.		
Ormond Beach Hospital, 264 S. Atlantic Ave., Ormond Beach, Fla.		Rtd-1
Osteopathic General Hospital of Rhode Island, 1763 Broad St., Edgewood 5, Cranston, R.I.	x	I-1
Osteopathic Hospital of Harrisburg, 1829 N. Front St., Harrisburg, Pa.	x	A-1; I-1; Pth-1; R-1; S-1
Osteopathic Hospital of Maine, 335 Brighton Ave., Portland 4, Maine	x	
Osteopathic Hospital of Wichita, 3557 E. Douglas, Wichita 8, Kansas		
Ottawa General Hospital, 900 E. Center St., Ottawa, Ill.		
Palmer Osteopathic Hospital, 18160 Woodward Ave., Detroit 3, Mich.		
Palmer Osteopathic Hospital-East, 4535 Cadieux Rd., Detroit 24, Mich.		
Park Avenue Hospital, 1225 N. Park Ave., Pomona, Calif.		
Park Foothills Clinic and Hospital, 8201 Sheridan Rd., El Paso, Texas		
Park View Hospital, 1021 N. Hoover St., Los Angeles 29, Calif.		Rt-1
Parkview Hospital, 1920 Parkwood Ave., Toledo 2, Ohio	x	
Phoenix General Hospital, 1950 W. Indian School Rd., Phoenix, Ariz.	x	
Physicians Hospital, 901 Olive Drive, Bakersfield, Calif.		
Plattner Clinic and Osteopathic Hospital, 322 N.E. 8th St., Grand Prairie, Texas		
Point Clinic and Hospital, 512½ Main St., Point Pleasant, W. Va.		OG-1; Rt-1; S-2
Pontiac Osteopathic Hospital, 50 N. Perry Ave., Pontiac, Mich.	x	
Pool Memorial Hospital, 17 W. Chickasaw, Lindsay, Okla.		
Porter Clinic - Hospital, 2401 Nineteenth St., Lubbock, Texas		Rtd-1
Portland Osteopathic Hospital, 2900 E. Steele St., Portland 9, Ore.	x	
Redfield Clinic Hospital, Redfield, Iowa		
Reid Hospital and Clinic, 1703 E. Central St., Bethany, Mo.		
Riley Sanatorium, 2514 Riverview Ave., North Muskegon, Mich.		
†*Rio Hondo Memorial Hospital*, 8300 Telegraph Rd., Downey, Calif.	x	S-1
Riverside Hospital, Clifton Park Manor, Wilmington 2, Del.	x	A-1
Riverside Osteopathic Hospital, 165 George St., Trenton, Mich.	x	A-2; Rtd-1; I-2; OG-1; Sg-1; S-2
Riverside's Osteopathic Hospital, 4295 Brockton Ave., Riverside, Calif.		
Riverview Osteopathic Hospital, 740 Sandy St., Norristown, Pa.	x	A-1; Rt-1; S-1
Rocky Mountain Osteopathic Hospital, 4701 E. Ninth Ave., Denver 20, Colo.	x	R-1; S-1
Saco Osteopathic Hospital, 3 Nott St., Saco, Maine		
Saginaw Osteopathic Hospital, 515 N. Michigan Ave., Saginaw, Mich.	x	A-2; R-1; S-2
San Antonio Osteopathic Hospital, 210 W. Ashby, San Antonio 2, Texas		
San Gabriel Valley Hospital, 115 E. Broadway, San Gabriel, Calif.	x	
Sandusky Hospital - Clinic, 47 Austin St., Sandusky, Mich.		
Sandusky Memorial Hospital, 2020 Hayes Ave., Sandusky, Ohio	x	
Selby General Hospital, 304 Putnam St., Marietta, Ohio	x	
Sheridan Community Hospital, 301 N. Main St., Sheridan, Mich.		
Sierra Hospital, 2025 E. Dakota, Fresno, Calif.		
South Bend Osteopathic Hospital, 2515 E. Jefferson Blvd., South Bend 1, Ind.	x	Rt-1
Standring Memorial Osteopathic Hospital, 12845 - 12th Ave., S.W., Seattle 66, Wash.	x	
Stevens Park Osteopathic Hospital, 1141 N. Hampton Rd., Dallas 8, Texas	x	S-1
Still-Hildreth Osteopathic Sanatorium, Macon, Mo.		
Still Osteopathic Hospital, 725 Sixth Ave., Des Moines 9, Iowa	x	Rtd-1; I-2; OG-1; Ped-1; S-1
Stocker Hospital and Clinic, 1005 N. Lake Rd., Oconomowoc, Wis.		
Stratton Hospital and Clinic, 306-308 E. Broadway, Cuero, Texas		
Sun Coast Osteopathic Hospital, 2025 Indian Rocks Rd., Largo, Fla.		
Talco Hospital and Clinic, 4th and Lillianstern Sts., Talco, Texas		
Tavel Clinic and Hospital, 4809 Austin St., Houston 4, Texas		
Tiqua General Hospital, 7722 N. Loop Rd., El Paso, Texas		
Traverse City Osteopathic Hospital, 625 Bay St., Traverse City, Mich.	x	
Trenton Osteopathic Hospital, 200 High St., Trenton, Tenn.		

Teaching hospitals are printed in *italics*	Teaching hospitals approved for Internships	Residencies
Troy Community Hospital, 100 John St., Troy, Pa.		
Tucson General Hospital, 3838 N. Campbell Ave., Tucson, Ariz.	x	
Victory Hospital, 6421 Coldwater Canyon, N. Hollywood, Calif.	x	
Vowell Maternity Hospital, 701 S. Campbell St., El Paso, Texas		
Waldo General Hospital, 8511 Fifteenth Ave., N.E., Seattle 15, Wash.	x	
Warren General Hospital, 667 Eastland Ave., S.E., Warren, Ohio	x	
Waterville Osteopathic Hospital, 85 Western Ave., Waterville, Maine	x	
Wellsburg Eye and Ear Hospital, 1006 Commerce St., Wellsburg, W. Va.		
West Allegheny Hospital, Lincoln Highway, Oakdale, Pa.		
West Broward Hospital and Clinic, 1101 W. Broward Blvd., Fort Lauderdale, Fla.		
West Side Osteopathic Hospital of York, 1253 W. Market St., York, Pa.	x	I-2; R-2; So-1; S-2
Wetzel Osteopathic Hospital, 1302-04 N. Main St., Carrollton, Mo.		
Wetzel Osteopathic Hospital, 105 E. Ohio St., Clinton, Mo.	x	S-1
Whitaker Osteopathic Hospital, 205 S. Fifth St., Moberly, Mo.		
Wilden Osteopathic Hospital, 1347 Capitol, Des Moines 16, Iowa	x	Rtd-1; I-1; S-1
Wolfe City Hospital, Jones St., Wolfe City, Texas		
Wolfe-Duphorne Hospital, 108 S. Pinkerton, Athens, Texas		
Yale Clinic and Hospital, 510 W. Hamilton, Houston 18, Texas		
Zieger Osteopathic Hospital, 4244 Livernois Ave., Detroit 10, Mich.	x	A-1; I-2; OG-3; Pth-1; Rt-2; S-2

(A)	Anesthesiology	(Op)	Ophthalmology	(Rad)	Radiation Therapy
(D)	Dermatology	(Ot)	Otolaryngology or Otorhinolaryngology	(Rt)	Roentgenology
(I)	Internal Medicine	(P)	Psychiatry	(Rtd)	Roentgenology (Diagnostic)
(N)	Neuropsychiatry	(Pa)	Anatomic Pathology	(S)	Surgery
(NI)	Neurology	(Ped)	Pediatrics	(Sg)	Obstetrical-Gynecological Surgery
(NIP)	Neurology and Psychiatry	(Pm)	Physical Medicine and Rehabilitation	(Sn)	Neurosurgery
(OG)	Obstetrics and Gynecology	(Pr)	Proctology	(So)	Orthopedic Surgery
(OO)	Ophthalmology and Otolaryngology or Ophthalmology and Otorhinolaryngology	(Pth)	Pathology	(Sp)	Plastic Surgery
		(PthC)	Pathology (Clinical)	(Spv)	Peripheral Vascular Surgery
		(R)	Radiology	(Su)	Urological Surgery

This section is published monthly to inform the practicing physician about new drug products and medical equipment made available on the market. It is a reference section prepared by THE JOURNAL *from descriptive material furnished by ethical manufacturers. The American Osteopathic Association does not necessarily advocate the use of these products nor disapprove any product not included. The purpose of the section is to provide trustworthy information in a convenient form.*

NEW PRODUCTS



HYGROTON®

Chemistry • Hygroton is a brand of chlorthalidone, with the formula 3-hydroxy-3-(4-chloro-3-sulfamylphenyl) phthalimidine.

Pharmacodynamics • Hygroton is an oral antihypertensive-saluretic agent having a prolonged action that insures smooth, sustained therapeutic effect. Comparative studies have shown it to be one of the most potent sulfonamide saluretics. The special advantage of Hygroton is that it greatly increases sodium excretion with only slight increase in potassium excretion, thereby reducing the risk of electrolyte imbalance. The drug also enhances chloride and water excretion, but has only slight effect on the excretion of bicarbonate, so that the danger of metabolic acidosis is largely avoided. The powerful saluretic action permits lifting of dietary salt restrictions, and rapidly relieves edema, both pulmonary and peripheral.

Toxicology • No serious side effects have been reported. Headache and transient nausea, as well as weakness or dizziness, have been reported in rare cases. As with any potent diuretic, patients should be observed closely for early signs of electrolyte imbalance. Caution should be observed in cases involving severe renal damage, and in those treated with ganglion-blocking and other hypertensive agents.

Indications • Hygroton is indicated for the treatment of arterial hypertension with or without congestive failure, and for relief of all types of edema involving salt and water retention, including conditions associated with congestive heart failure, renal disease, hepatic cirrhosis, pregnancy, steroid administration, obesity, and the premenstrual syndrome. Reports have indicated that response is often obtained in patients with arterial hypertension who have not responded to other types of therapy. Although Hygroton alone is effective in reducing pressure, it may be combined with other antihypertensive agents.

Dosage schedule • Initially, the dosage of Hygroton is 50 to 100 mg. daily; some patients may require 150 or 200 mg. daily. Divided doses are not necessary, and a single dose with the morning meal is recommended. Maintenance dosage must be individually adjusted and often depends on the patient's salt intake. Hygroton may be administered three times a week (e.g., Monday, Wednesday, and Friday) with equally good effect by increasing the single dose, provided that no more than 200 mg. is given on any 1 day.

How supplied • Scored tablets of 100 mg., in bottles of 100 tablets.

Manufacturer • Geigy Pharmaceuticals, Ardsley, New York.

CHLORASEPTIC®

Chemistry • Chloraseptic mouthwash and gargle is a combination of sodium phenolate, sodium tetraborate, phenol (less than 1.4 per cent), menthol, thymol, glycerin, and chlorophyll. The solution is buffered to a pH of 8.5.

Pharmacodynamics • Chloraseptic solution is an anesthetic agent with bactericidal and fungicidal properties derived from phenolic salts. In oral and pharyngeal tissues the anesthetic action is immediate (within 15 seconds), and relief from soreness has been reported to last from 15 minutes to 2 hours. The inclusion of a surface-tension reducing agent enables Chloraseptic to penetrate mucous secretions. The solution has a broad bactericidal and fungicidal spectrum, and has been found effective against Streptococcus hemolyticus as well as Staphylococcus aureus, Salmonella typhosa, Monilia albicans, Trichophyton mentagrophytes, Escherichia coli, Proteus vulgaris, and Diplococcus pneumoniae. In patients known to be hypersensitive to penicillin or other antibiotics, susceptible bacterial infections in oral and pharyngeal areas may be treated with Chloraseptic because its action is bactericidal, nontoxic, and nonsensitizing. One comparative study has shown Chloraseptic to be more effective than injectable penicillin (600,000 units) in the treatment of streptococcal pharyngeal infections.

Toxicology • Acute oral toxicity tests indicate that Chloraseptic may be regarded as nontoxic. In clinical studies, no toxic or sensitizing effects have been noted. Blood studies revealed no adverse effect of Chloraseptic on blood chemistry.

Indications • Chloraseptic is indicated in the following medical conditions: acute tonsillitis, chronic and acute pharyngitis, post-tonsillectomy care, peritonsillar abscess, hypopharyngitis, smoker's throat, and acute oral infections. In dental practice the drug is useful for gingivitis, pericoronitis, Vincent's infection, aphthous stomatitis, herpetic lesions, after oral surgery (including simple extractions, surgical removal of impacted teeth, cysts, and neoplasms), local trauma, and irritations of the oral mucosa.

Contraindications • There are no contraindications to the use of Chloraseptic in the suggested conditions.

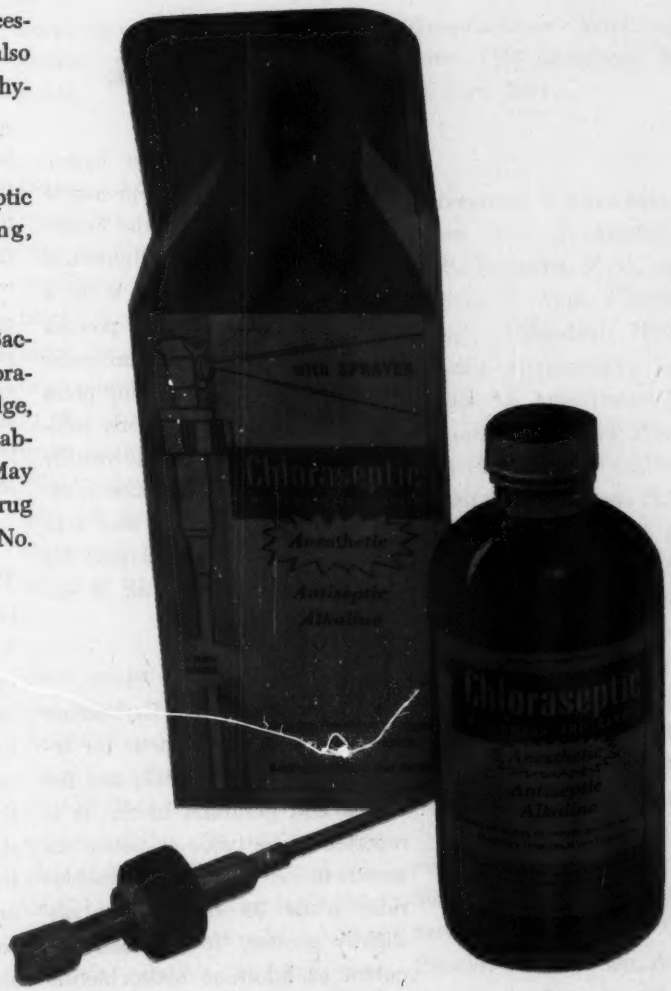
Dosage schedule • Chloraseptic is used full strength in all conditions. For deep throat infections the patient is advised to spray Chloraseptic into the throat 5 times and swallow, repeating every 2 hours. If the drug is used as a gargle, the patient is advised to swallow about one-half teaspoonful of the drug after gargling. After tonsillectomy or dental extraction the patient is

advised to irrigate the sore area with Chloraseptic for about 5 seconds each time. For sore mouth and gum conditions, Chloraseptic is used as a rinse, full strength; as a daily deodorizing mouthwash it is diluted with an equal amount of water.

How supplied • Chloraseptic is available in a 6-oz. bottle with sprayer or 12-oz. bottle without sprayer; no prescription is necessary. A half-gallon size is also available to pharmacists and physicians.

Manufacturer • The Chloraseptic Company, 400 Victor Building, Washington 1, D.C.

References • Sophian, L. H., Bacteriologic Study, Bayside Laboratories, June 1952. Morganreidge, K., Food and Drug Research Laboratories, Report No. 76888, May 1958. Brin, M., Food and Drug Research Laboratories Report No. 77605, September 1958.



CARBOCAINE® HYDROCHLORIDE

Chemistry • Carbocaine hydrochloride is a brand of mepivacaine hydrochloride, which is the hydrochloride of d,l-N-methylpipecolic acid 2,6-dimethylanilide. It is a white, crystalline, odorless powder with a salty, bitter taste, molecular weight of 282.8, and melting point of 261 C. The base is poorly soluble and the hydrochloride readily soluble in water. Carbocaine is resistant to both alkaline and acid hydrolysis, and can be boiled for several hours without risk of decomposition.

Pharmacodynamics • Carbocaine is a potent local anesthetic for infiltration and nerve block, and for caudal and peridural block. It is reported to be twice as potent an anesthetic as procaine hydrochloride, while its toxicity is only slightly greater. It is at least as potent as lidocaine hydrochloride but slightly less toxic. Carbocaine provides rapid onset, adequate depth, and long duration of anesthesia, combined with excellent tissue compatibility. The agent may be used with epinephrine but has the advantage of a highly satisfactory performance without it. The drowsiness or lassitude observed with some other agents used without epinephrine has not been observed with Carbocaine. However, epinephrine may be added if desired, in a concentration of 1:200,000, for possible further safety or longer duration of anesthesia.

Toxicology • Carbocaine produces virtually no vasodilation and has low toxicity. Only mild side effects, consisting mainly of nausea and vomiting, have been encountered in a few patients. However, if circulatory or respiratory complications or any other toxic symptoms should occur due to unusual sensitivity, faulty technic, overdosage, or inadvertent intravascular or subarachnoid injection, treatment should be the same as for other local anesthetics. Close familiarity with various technics and readiness

to use known precautionary and emergency measures are mandatory. In general, the precautions to be observed with Carbocaine are those which are observed with respect to all local anesthetics.

Indications • Carbocaine is indicated for blocking of cervical, brachial, intercostal, or pudendal nerves, for caudal and peridural block, for infiltration, and for therapeutic block in the management of pain.

Contraindications • There are no specific contraindications to the use of Carbocaine. General contraindications to caudal and peridural anesthesia include local infection at the proposed injection site, neurologic disease, and spinal deformities. Continuous caudal anesthesia is contraindicated in the presence of placenta previa, inertia uteri, uncontrollable hysteria, and disproportion between child and pelvis. Peridural or caudal anesthesia is also contraindicated in extremely obese persons in whom the sacral hiatus cannot be palpated, and in persons who are emotionally unstable.

Dosage schedule • For nerve block: 5 to 20 cc. of a 1 or 2 per cent solution of Carbocaine, depending on the area and extent of block. For caudal and peridural block: from 15 to 30 cc. of a 1 per cent solution. For infiltration: up to 40 cc. of a 1 per cent solution or an equivalent amount in a more dilute solution, depending on the area of the operative field. For therapeutic block: from 1 to 5 cc. of a 1 or 2 per cent solution.

How supplied • For infiltration and nerve block, Carbocaine hydrochloride, 1 per cent, in sterile saline solution, in multiple-dose vials of 50 cc.; 2 per cent in sterile saline solution, in multiple-dose vials of 50 cc. For caudal and peridural block, Carbocaine hydrochloride, 1 per cent, in sterile, modified Ringer's solution, in single-dose vials of 30 cc. Carbocaine solutions may be re-autoclaved.

Manufacturer • Winthrop Laboratories, 1450 Broadway, New York 18, New York.

References • Ekenstam, B., and others, Brit. J. Anaesth. 28:503, 1956. Luduena, F. P., and others, Toxicol. & Appl. Pharmacol. (in press). Ulfendahl, H. R., Acta anaesth. scandinav. 1:81, 1957. Frahm, M., Anaesthesist 7:44, 1958. Truant, A. P., and Wiedling, S., Acta chir. scandinav. 116:351, 1959. Ekenstam, B., Egner, B., and Pettersson, G., Acta chem. scandinav. 2:1183, 1957. Brun, A., Acta anaesth. scandinav. 3:59, 1959. Nilsson, E., and Wendeberg, B., Acta anaesth. scandinav. 1:87, 1957. Dhuner, K. G., Oljelund, O., and Aagesen, G., Acta chir. scandinav. 112:350, 1957. Dam, W., and Guldmann, N., Acta anaesth. scandinav. 1:101, 1957. Personal communications: M. S. Sadove, C. R. Stephen, W. F. Brehm, H. W. Bennett, P. P. Volpitto, E. Granet, H. Paradis, E. J. Gordon, A. L. Lichtman, R. A. Gordon, and E. A. Rovenstine.

TIMOVAN®

Chemistry • Timovan is a brand of prothipendyl hydrochloride, [4-dimethyl-aminopropyl-pyrido(3,2 beta) (1,4) benzothiazine] hydrochloride-monohydrate.

Pharmacodynamics • Timovan was specifically developed for active patients in need of calming without the "slow-down" of sedatives or the hazards of tranquilizers. The drug acts to alleviate tension and anxiety through its central effect in inhibiting overstimulation of the cortical and psychic areas of the brain, and to stabilize the autonomic nervous system by reducing excessive response to irritating stimuli. In studies with human subjects, Timovan showed no electroencephalographic sleep pattern, and differences between the two hemispheres were balanced. It tended to stabilize disturbed alpha-rhythm. Tendency to excite latent convulsion potentials could not be demonstrated. In electrocardiographic studies on circulation it has been demonstrated that Timovan inhibits the pressor effects of centrally active stimulants such as pentylenetetrasol and nikethamide. It showed a less marked inhibition of the pressor effects of epinephrine, and a minor influence on norepinephrine action. Although Timovan is nonhypnotic, it is reported to produce improved sleep patterns, and might therefore be preferred to barbiturates where these are not well tolerated or where there is danger of overdependence on such drugs. The calmative effect of Timovan is not diminished on long-term therapy.

Toxicology • Timovan is relatively free of side effects, and no toxic reactions have been reported. In clinical studies reported there was no evidence of toxicity in patients receiving doses considerably higher than the recommended range for more than 3 months; blood levels remained within normal limits. There was no evidence of hepatitis in a series of elderly patients receiving the drug continuously for 6 months. Timovan does not cause addiction.

Indications • Timovan is recommended for the relief of tension neuroses in the ambulatory patient, especially adolescent or elderly patients, and for the treatment of the neurogenic component aggravating symptoms of other disorders such as acne and other dermatoses, allergies, gastrointestinal disturbances, hypertension, menopausal distress, and arteriosclerosis.

Contraindications • Timovan should not be used in cases of acute alcoholism or barbiturate poisoning.

Dosage schedule • One or two tablets three or four times daily; dosage ranges from 100 to 400 mg. depending on age of patient and severity of symptoms.

How supplied • Timovan is available in 25-mg. tablets, bottles of 100 and 1,000 (No. 739); 50-mg. tablets, bottles of 100 and 1,000 (No. 740). A physician's prescription is required.

Manufacturer • Ayerst Laboratories, New York 16, New York.

References • Pharmacology Report, Ayerst Laboratories. Medical Records and Pharmaceutical Research Laboratory Records, Chemiewerk Homburg A/G. Quandt, V. J., Von Horn, L., and Schliep, H., Psychiat. et Neurol. 135:197, 1958. Linke, H., München, med. Wchnschr. 100:969, 1958.

IRCON

Chemistry • Ircon is the iron salt ferrous fumarate ($FeC_4H_2O_4$). Each 200-mg. tablet contains the equivalent of 65 mg. of elemental iron.

Pharmacodynamics • Ferrous fumarate has been shown in pharmacologic studies to be less toxic in massive doses than other widely used iron salts. Since it is well tolerated in humans, interruptions in therapy resulting from gastrointestinal reactions are infrequent. It has been found useful for patients who are unable to take other iron preparations.

Precautions • As with all drugs of this class, Ircon should be kept out of the reach of children. Ferrous fumarate should be used with care in the presence of peptic ulcer, regional enteritis, and ulcerative colitis.

Indications • Ircon is indicated for the prophylaxis and treatment of iron deficiency anemias resulting from inadequate iron intake or from blood loss.

Dosage schedule • For adults, the recommended dosage of Ircon is three to four tablets daily, or as directed by physician.

How supplied • Golden-yellow, sugar-coated tablets, 200 mg., in bottles of 100.

Manufacturer • Lakeside Laboratories, Inc., Milwaukee, Wisconsin.

ISMELIN [7,8]

Chemistry • Ismelin sulfate is a brand of guanethidine sulfate, which has the chemical formula [2-(octahydro-1-azocinyl)-ethyl]-guanidine sulfate.

Pharmacodynamics • Ismelin is said to differ chemically and pharmacologically from all previous antihypertensive agents. Its action is peripheral, exerting a selective inhibitory effect on the sympathetic nervous system which results in a gradual, intensive, and prolonged reduction in elevated blood pressure. Unlike ganglionic blockers, Ismelin does not suppress the parasympathetic nervous system. The drug causes some peripheral vasodilation and reduces the heart rate, often in doses smaller than those affecting the blood pressure. Results of experiments with animals indicate that the primary effect of Ismelin is due to inhibition of the release and/or distribution of transmitter substances from the sympathetic nerve terminals, probably by a reduction in stores. Studies in man indicate that, at least in the upright position, there is a pooling of venous blood, resulting in decreased venous return and decreased cardiac output.

Toxicology • The side effects of Ismelin are due to the physiologic actions of the drug; toxic or allergic manifestations have not so far been reported. Postural hypotension may occur; mild symptoms can be minimized by careful dosage adjustment, but severe symptoms require discontinuance of the drug until all symptoms have cleared. Unlike ganglionic blockers, Ismelin does not cause *impotentia erigendi*; however, ejaculation is sometimes completely inhibited. Excessive fatigue, diarrhea, edema, congestive heart failure, and nasal congestion have been reported as side effects of Ismelin. Special treatment involves individual adjustment of dosage and in some cases combination therapy, as indicated.

Indications • Ismelin is indicated in the treatment of most forms of hypertension, particularly the more severe forms and the malignant phase. Cases of hypertension secondary to pyelonephritis, glomerulonephritis, and renal amyloidosis have responded well. Hypertension secondary to constriction of the renal artery may be treated symptomatically with Ismelin. The drug is helpful in any condition marked by sympathetic predominance. In general, Ismelin should be considered for patients with moderate to severe hypertension previously untreated, patients not helped by other antihypertensive drugs, and patients intolerant to the side effects of ganglion-blocking agents.

Contraindications • On theoretical grounds Ismelin is contraindicated in pheochromocytoma, since it acts to release and to augment the effect of norepinephrine, and might thus cause a precipitate rise in blood pressure. With regard to clinical usage in general, it is emphasized that physicians administering Ismelin should carefully observe the precautions necessary with all potent antihypertensive agents.

Dosage schedule • Dosage of Ismelin is individualized, the initial small doses being increased according to the patient's response. Since Ismelin has a long duration of action, dosage increases should be made no oftener than every 5 to 7 days unless the patient is in a hospital. A single daily dose is generally most convenient, starting with 10 mg. and increasing by 10-mg. increments; hospitalized patients who can be carefully observed may be started on higher doses. In principle, it is both desirable and necessary to use the lowest effective dosage. Severe

diarrhea is a sign of overdosage. Ismelin can be used profitably with other antihypertensive agents, and should be added to any regimen (except ganglion-blocking agents) exactly as if it were the sole agent. After control is established all drugs should be reduced to the lowest effective level.

How supplied • Ismelin tablets, 10 mg. (yellow, scored) and 25 mg. (white, scored); bottles of 100.

Manufacturer • Ciba, Summit, New Jersey.

References • Page, I. H., and Dustan, H. P., J. Am. M. A. 170: 1265, 1959. Dustan, H. P., and others, J. Lab. & Clin. Med. 54:807, 1959. Richardson, D. W., and Wyso, E. M., Virginia M. Month. 86:377, 1959. Richardson, D. W., and others, Circulation 20:756, 1959. Frohlich, E. D., and Freis, E. D., M. Ann. District of Columbia 28:419, 1959. Brest, A. N., and others, Current Therap. Res. 2:17, 1960. Leishman, A. W. D., Matthews, H. L., and Smith, A. J., Lancet 2:1044, 1959. Symposium on Guanethidine (Ismelin), U. Tenn. Coll. Med., Memphis, April 1960. Conference on New Diuretics and Antihypertensive Agents, New York Acad. Sci., New York, May 1960.

CURRENT LITERATURE

The management of severe viral hepatitis

► An evaluation of recent advances in the treatment of viral hepatitis is presented by Jeremiah A. Barondess, M.D., in *The Medical Clinics of North America,* May 1960. The article is part of the symposium on diseases of the liver, pancreas, and biliary tract which forms the contents of this issue of the journal.

Although specific antiviral agents are not available, there is evidence that current treatment measures are effective in reducing the duration of the disease, helping to alleviate the patient's discomfort, and perhaps in reducing the mortality rate in that small proportion of cases in which the disease is fatal. For this discussion the author considers severe hepatitis to include all cases in which the virus insult to the liver is sufficient to result in clinical illness with jaundice. Considerable interest has centered on the use of ACTH and adrenal cortical hormones, and although published reports are somewhat conflicting, certain clear indications are beginning to emerge. Patients with advancing or very severe hepatic involvement should be so treated, particularly when signs of central nervous system dysfunction appear. If the disease progresses to hepatic coma, the almost-certainty of death warrants the trial of heroic measures, and there is evidence that massive doses of cortisone (1,000 to 1,500 mg. daily) may be lifesaving. Hormone treatment may also be advantageous for patients who fail to respond to standard measures, including those with sustained high fever or with protracted anorexia and vomiting, especially in association with progressive deterioration of liver function. In general, in acute viral hepatitis the steroid hormones may be expected to produce increased appetite and sense of well-being, a sharp drop in serum bilirubin concentration, improvement in cholesterol esterification, and probably shortening of the course of the disease; also, healing of liver lesions may be accelerated. Therapy must be managed very cautiously, however, to avoid recrudescences or frank relapses during or after treatment.

The concept of strict bed rest has been modified to allow ambulation for relatively young and healthy patients. A great many diet studies have been carried out, with somewhat conflicting results; the consensus, however, indicates that a high-calorie diet with 19 per cent protein calories significantly reduces the duration of jaundice. There is no evidence that lipotropic agents are of value.

The various treatment maneuvers in severe viral hepatitis must be applied to the patient in a highly individualized fashion. Clarification of treatment principles must await more controlled clinical studies.

ABO(H) blood incompatibility as a cause of infertility: a new concept

► Data supporting a theoretic concept of human infertility are presented by S. J. Behrman, M.B., Ch.B., John Buettner-Janusch, Ph.D., Rodger Heglar, M.A., H. Gershowitz, Ph.D., and W. L. Tew, M.D., in the *American Journal of Obstetrics and Gynecology,* May 1960. It is estimated that 10 to 20 per cent of all infertile couples represent "refractory" infertility of which the cause is unknown. There is some evidence that the etiologic basis for this condition might be a possible ABO(H) blood group incompatibility.

Since the publication of reports demonstrating the existence of ABO(H) hemolytic disease of the newborn, many studies of the influence on fertility have been carried out, the results suggesting a possible immunologic basis for this unexplained infertility in gynecologically and urologically normal couples. Other reports have suggested as a cause the production of autoantibodies or sperm antiagglutinogen, implying antibody production in response to the antigen (i.e., sperm). This is analogous to the Rh incompatible mating, where the Rh-negative mother, having been sensitized, produces a specific antibody directly against the antigens of the Rh-positive fetus. In contradistinction, the offending antibody in the ABO(H) blood incompatibility is a naturally occurring one and most frequently involves the type O wife and a type A or AB husband. These naturally occurring antibodies have been detected in almost all the body secretions including the cervical secretion. It has previously been demonstrated that the sperm carry the antigen and that these sperm can be agglutinated by ordinary anti-A or anti-B sera, a result which these authors have confirmed. It is assumed that the exact mechanism involves blocking or immobilizing of the sperm antigens by the antibodies present in the cervical secretion. Careful evaluation of 102 such infertile couples showed that 87.3 per cent had incompatible matings as compared to 38.6 per cent in 171 fertile couples.

In 7 additional infertile couples who conceived after 10 years of infertility, all the offspring were of type O, indicating that the A or B fathers were heterozygous and the children were born of homospecific pregnancies.

Increased transmissibility of staphylococci to patients receiving an antimicrobial drug

▶ The increased transmissibility of staphylococci in the absence of any change in intrinsic pathogenicity has been investigated by C. A. Berntsen, M.D., and Walsh McDermott, M.D., who report their results in *The New England Journal of Medicine,* March 31, 1960. The capacity of a strain to survive transfer to a new host and maintain itself there is not necessarily identical with its pathogenicity. The relative transmissibility of drug-resistant and drug-susceptible strains raises an important question regarding staphylococcus infections in hospitals.

The authors found that tetracycline therapy in patients in a hospital was associated with a 30 per cent increase in carriers of staphylococci, in contrast to the 11 per cent increase among untreated patients. No evidence was found that drug-resistant strains were intrinsically more transmissible than drug-susceptible strains. Transmissibility was considerably increased, however, among those patients treated with the antimicrobial drug, and it is believed that the important factor in this effect was the drug-induced disturbance in the usual interspecies relations among the nasopharyngeal flora. The authors suggest that when a physician decides to administer antimicrobial therapy to a patient in a hospital environment, he adds to the risk of drug toxicity the appreciably increased risk of producing a carrier of drug-resistant staphylococci.

The endocrine eye lesion in hyperthyroidism

▶ The incidence and course of eye lesion in 165 patients treated for thyrotoxicosis with iodine^{131} are reported by Henry E. Hamilton, M.D., Richard O. Schultz, M.D., and Elmer L. DeGowin, M.D., in the *A.M.A. Archives of Internal Medicine,* May 1960. Repeated emphasis on exophthalmos has diverted attention from other ocular disturbances in thyroid disease. In the authors' opinion, exophthalmos may not exist at all in an eye with grossly disturbed function, and they have undertaken a study to define precisely the eye lesions of thyrotoxicosis under the designation endocrine eye lesion. They consider the component parts of the disturbance to be as follows: changes in ocular protrusion, lid retraction, soft tissue reaction, and disturbances in ocular motility. Changes in protrusion resulting in exophthalmos ordinarily represent the asymptomatic state of the eye lesion. The other reactions constitute the symptomatic state, indicated by lacrimation, pain, pressure, burning, diplopia, and decreased visual acuity. Of the 165 patients, 120 had some components of the eye lesion, and the incidence was about the same for men as for women. The lesion, in all degrees of severity, was found associated with both "nodular" and "diffuse" thyroid glands. The control of thyrotoxicosis by I^{131} brought prompt improvement of the ocular signs and symptoms in most patients with the endocrine eye lesion. No means were discovered to predict before treatment which patients would fall in the small group with increased severity of the eye lesion. The results of the study are tabulated and discussed in detail in the article.

Spondylosis of the cervical spine with compression of the spinal cord and nerve roots

▶ The differential compression of nerve roots that sometimes occurs in spondylosis of the cervical spine is emphasized in a report by Paul Teng, M.D., in *The Journal of Bone and Joint Surgery,* April 1960. The author's discussion of mechanisms that produce compression of the spinal cord and nerve roots is based on a study of 20 patients treated surgically, on anatomic studies in cadavers, and on roentgenologic examinations of the cervical spine. The 20 cases are reviewed analytically, and complete details are given for 5 cases which represented five different manifestations of the disease with respect to symptoms and pathologic changes. The surgical procedures used in the 20 cases included laminectomy, foraminotomy for decompression of the nerve roots, section of the dentate ligaments, and separation or excision of the arachnoid adhesions if present.

The role of trauma in spondylosis of the cervical spine is difficult to evaluate, although its relation to the development of symptoms has often been noted. Trauma may cause symptoms in three ways: herniation of the intervertebral disk and formation of spurs typical of spondylosis, compression of spinal cord and nerve roots in a previously asymptomatic spondylotic spine, and aggravation of symptoms in established spondylotic myelopathy. The osteophytic ridge that is formed extends into the spinal canal and also laterally into the intervertebral foramen, compressing the nerve roots. The lateral extension of a larger inferior lip deforms the lower half of the foramen, producing compression on motor nerve roots only. If the deformity involves the upper portion of the foramen, there is compression of sensory nerve roots only. This differential involvement has a physiologic basis also, since motor nerves are more susceptible than sensory nerves to ischemia caused by compression. In most cases of spondylosis, however, both nerve roots are involved. When conservative treatment fails, surgical decompression is the last resort. To avoid quadriplegia and other serious results, the surgeon must exercise care to avoid hyperextension of the neck and pressure on the cord by an instrument. The prognosis in this disease depends on the duration and degree of trauma incurred by the cord or nerve roots or both.

The management of cutaneous hemangiomas in infancy

► A pediatrician's view of the controversial subject of therapy in cases of hemangioma is supplied by Donald Pinkel, M.D., in the *New York State Journal of Medicine,* May 1, 1960. The elevated capillary hemangioma of the skin in infants is sometimes called strawberry nevus, strawberry hemangioma, or cavernous hemangioma. It may be cutaneous, subcutaneous, or mixed, and usually appears at about 1 or 2 weeks of age, growing rapidly during the next 6 or 8 months. It may be located on any area of the skin. A review of the literature seems to indicate that in most cases the lesion may be expected to regress eventually, even without treatment. It is difficult to evaluate treatment in a disease in which spontaneous remissions or cures are common. Although many claims have been made for many different treatment methods, accurate evaluation must await carefully designed studies utilizing placebo or untreated controls. Only one such study, involving ionizing radiation therapy, has been reported, and these results were negative with regard to influence on prognosis. Because of the possibly increased risk of cancer in children undergoing ionizing radiation, such treatment should be used only with the utmost care. Soft-tissue tumors that are not clearly hemangiomas should be explored, biopsied, and treated appropriately. To misdiagnose these tumors as subcutaneous hemangioma will lead to delay in treatment which might be fatal. On the basis of published reports and the records of 55 patients seen at the Roswell Park Memorial Institute, the author concludes that no present mode of treatment has been unequivocally demonstrated to improve the ultimate prognosis in cutaneous hemangioma in infants. He suggests that physicians avoid treating these lesions except for measures as indicated to minimize irritation and prevent infection, and that where therapy is required, clinical studies be designed to provide objective evaluation of the efficacy of the treatment method selected.

Chronic occult adrenocortical insufficiency

► Relative insufficiency of the adrenal cortical function may occur more often than has been realized, according to a report by George T. Kiss, M.D., and Thomas F. Fogarty, M.D., in *The Journal of the American Medical Association,* April 23, 1960. Diffuse, nonspecific symptoms may continue for many years during which the tests of adrenal function appear to be quite within normal limits. The condition manifests itself chiefly in the patient's inability to ward off minor illnesses and in the long periods of convalescence that ensue. Gastrointestinal and neurologic symptoms are likely to appear at times of stress, and there may be a history of general lassitude increasing over the years. The authors describe a case in which a 50-year-old woman had experienced episodes of syncope and weakness once or twice a month since the age of 18. The history also included vomiting, diarrhea, frequent respiratory infections, hyperpigmentation, convulsions, and generally poor response to stress. Basal levels of 17-hydroxycorticosteroids were normal, but there was a lack of significant adrenal response to administration of ACTH, and this was the only diagnostic evidence of insufficient function. The electroencephalogram revealed diffuse increased irritability. The patient had no further seizures after temporary institution of anticonvulsant therapy or later when she was receiving steroids alone. The patient has been maintained on 5 mg. desoxycorticosterone acetate daily, with the dosage increased to 10 mg. in times of stress, and on this regimen continued improvement has been noted in all symptoms including vitiligo.

Disorders of the cervical spinal cord in older patients

► Cervical spondylosis with compression of the spinal cord is the most common cause of spastic paraparesis of the legs in middle-aged and elderly persons, according to a report by Fred Plum, M.D., in *Postgraduate Medicine,* May 1960. Other diseases that may have this effect include subacute combined degeneration, multiple and amyotrophic lateral sclerosis, tumors of the cervical spinal cord, and syringomyelia. Accurate diagnosis depends on attention to a history of previous neurologic episodes, demonstration of abnormalities above the neck level, presence and type of sensory changes, and involvement of excretory sphincters. Lumbar puncture, x-rays of the cervical spine, and blood counts are necessary for differential diagnosis, with cervical myelography and vitamin B_{12} absorption studies as indicated.

The pathogenesis of cervical spondylosis in these patients is related to degenerative disease of the joints, and the disease is often marked by long periods of symptomatic stability. A history of recent trauma is rarely associated with the appearance of symptoms, in the author's experience. Intermittent cervical traction produces at least temporary clinical improvement in most cases of cervical spondylosis in older patients, and sometimes the degree of improvement is remarkable in view of the underlying abnormality of bone and cartilage.

In differentiating between spondylosis and other conditions manifested by paraparesis, there are various clinical and laboratory signs to rely on. Amyotrophic lateral sclerosis frequently shows signs of neurologic lesions clearly located above the neck level; sensory changes are lacking, cervical roentgenologic abnormalities are absent or coincidental, and cerebrospinal fluid is normal. Vitamin B_{12} deficiency is suggested by gastric achlorhydria plus a macrocytic anemia and reticulocytic response to parenteral injections of the vitamin. Multiple sclerosis should be suspected when the patient's history shows episodes of migrating or fleeting neurologic deficits, especially those affecting cranial nerve function. Spinal neoplasia can usually be identified by the bone destruction seen in x-ray films and by the type of sensory changes.

BOOK REVIEWS

▶ *Books for review which were received during the period from July 5 to August 5 are listed on advertising pages A-167 to A-168. Reviews of these books will be published as space permits.*

▶ READINGS IN PSYCHOANALYTIC PSYCHOLOGY. Edited by Morton Levitt, Ph.D., Associate Professor of Psychiatry and Assistant Dean, Wayne State University College of Medicine, Detroit, Michigan. Cloth. Pp. 413, with illustrations. Price $8.50. Appleton-Century-Crofts, 35 West 32nd Street, New York 1, 1959.

This volume, as its title suggests, has some excellent papers on psychoanalytic psychology. Most of these have previously been published in various journals, but a few essays have been written expressly for this book. On the other hand, the volume cannot hope to do what Dr. Levitt intended: to provide "a relatively comprehensive treatment of both the theoretical and the practical aspects of psychoanalysis." While it is true that he has gathered contributions on psychoanalysis from twenty-four authors, yet, as he knows, Freud's scientific output alone comprised some twenty-four volumes. Therefore, this volume can hardly be considered a complete review of psychoanalysis.

This statement is not meant to detract from the excellence of the contribution, however. Its six sections concern (1) general considerations, (2) developmental psychology, (3) the ego and defensive processes, (4) psychoanalytic diagnosis, (5) theory and technic, and (6) applied psychoanalysis. There is also an excellent index.

In reviewing this volume for THE JOURNAL it would not be desirable to describe each article in detail. However, this reviewer particularly enjoyed an essay entitled "Freud and Literature," by Lionel Trilling. The one by Thomas S. Szasz on "Psychoanalysis and medicine" deals in an honest and scientific manner, without apparent political bias, with the question of lay analysis. It also deals with the problem of why the therapeutically more effective physician of today has less public respect than a doctor of the "good old days."

In general, this book is well worth the reading for every psychoanalyst, psychiatrist, and person interested in psychoanalysis.

IRWIN ROTHMAN, V.M.D., D.O.

▶ MANUAL OF SKIN DISEASES. By Gordon C. Sauer, M.D., Assistant Clinical Professor of Medicine (Dermatology) and Chief of the Section of Dermatology, University of Kansas School of Medicine. Attending Physician, General Hospital, Kansas City, Mo.; Consultant, U.S. Army Hospital, Fort Leavenworth, Kansas. Cloth. Pp. 269, with 151 illustrations and 28 color plates. Price $9.75. J. B. Lippincott Company, East Washington Square, Philadelphia 5, 1959.

This text is written for medical students, interns, and men in general practice. It is a book a student can use and then as he progresses to internship and to practice he may supplement it as necessary. If the book is used to its full advantage it will be an asset to the physician for a long time.

Each disease is defined; its distribution is given; its etiology is presented in a concise and definite statement, if known; the diseases that it should be differentiated from or may be confused with are mentioned, with pertinent facts; information on treatment is compact, conservative, and up to date. One attractive asset is the stress of physiologic distribution by the use of line model figures; this does much to orient a student. There is also a section on geographic distribution by authors from each reporting locale. There are twenty-six quality color plates as well as numerous representative and excellent black and white pictures. When there are proprietary medications or ointments they are named, with manufacturers, in typical prescriptions.

The rarer diseases are mentioned but not stressed, so that there is not the confusion so frequently found in texts that try to cover all things for the sake of completeness and leave the student or man in general practice confused. Another attractive feature is a dictionary index which defines many of the rare diseases not covered in the text; this is excellent as a quick orientation point.

This book is recommended as a basic dermatology text for students, interns, and men in general practice.

A. B. ULBRICH, D.O., and D. KOPRINCE, D.O.

▶ THE MEDICAL SOURCEBOOK, A reference handbook for legal, legislative and administrative personnel. By Fred A. Mettler, Ph.D., M.D., Sc.D. (Hon.), Professor of Anatomy, Columbia University. Cloth. Pp. 1000, with illustrations. Price $25.00. Little, Brown & Company, 34 Beacon Street, Boston, 1959.

An important book is always subject to special scrutiny by reviewers and prospective users. Much higher standards are applied to a major reference work than, for example, to a short review of current orthopedic appliances. There is no question that *The Medical Sourcebook* is a major work, monumental in scope and ambitious in purpose. However, its success can be accurately judged only after trial by use.

Dr. Mettler has recognized that doctors and law-

yers often have difficult problems of communication, partly because each is a layman in the other's field and partly because the basic concerns of the two professions are so divergent. In a thoughtful preface, he details these incompatibilities and offers a beginning apology for the medical profession in this connection. "A good physician," he says, "will invariably subordinate all other considerations to that of the welfare of his patient." He is understandably concerned that long-continued litigation may block early and complete cure in his patient and precipitate many other problems.

Because a frame of reference was necessary, Dr. Mettler has chosen the medical viewpoint for terminology and concepts. One might go a step further and say that he has specifically chosen the anatomist's viewpoint, as contrasted with that of the clinician. Therein may lie one of the book's difficulties.

But first, a brief description of the contents: The introductory sections discuss the problems of communicating medical matters to nonmedical personnel. A long general Chapter 1 discusses many subjects, including nomenclature, the medical library, various components of injury and healing, personality disorders, and the problems of diagnosis. At Chapter 2 the discussion of anatomy begins, and it extends through Chapter 13. The first of these chapters concerns topographic anatomy; the next three discuss body systems; and the next eight are examinations of anatomic regions. There are discussions of pathologic change interwoven with the anatomic descriptions, but the major portion of the text and diagrams is concerned with identification of structures and clarification of nomenclature. The last chapter describes the most common causes of the most common complaints, many of which are distressingly broad and uncertain subjects. However, the coverage is at least basic, if not complete. The appendix is a guide to the activities, personnel, literature, and societies in the basic sciences and clinical fields of medicine. This includes a discussion of the status of the expert witness as a specialist, and certification; the degrees held by personnel in the field of medicine and the societies to which they belong; abbreviations encountered after the names of medical personnel and writers; and a section called "The Fields of Medicine," which describes and gives a brief bibliography for each of the official and nonofficial specialties a medical practitioner may embrace. The index is extensive, but it largely serves as a guide to "standard" and "official" anatomic nomenclature, with incidental references to lay terminology.

The usefulness of the book will doubtless be proportional to the reader's needs. However, the field should be wide. The author served on the New York Academy of Medicine's Committee on Public Health, and was the frequent recipient of inquiries concerning "basic formulations on matters of medicine which are of importance to legislators and lay administrators"; so he is doubtless familiar with the areas where the bulk of questions arise. There is an enormous amount of valuable information in the book. However, we are of the opinion that its usefulness could have been improved by including in the index exhaustive entries for the type of terminology with which an educated layman would come equipped, instead of spending page after page on Latin versus English terminology. We discovered in the text a number of items that could not be traced in the index by use of an intelligent layman's vocabulary. Also, the material on certain pathologic entries is somewhat hard to locate; if only a general complaint is known, for example, there is no guide to entries except through the anatomic area or region.

Even with these drawbacks, there is no question that the author has performed a monumental task, and that the product of his work will be of nearly inestimable value. The book is highly recommended.

▶ THE ESSENTIALS OF ROENTGEN INTERPRETATION. By Lester W. Paul, M.D., Professor of Radiology and Chairman of the Department of Radiology, The University of Wisconsin Medical School; and John H. Juhl, M.D., Associate Professor of Radiology, The University of Wisconsin Medical School. Cloth. Pp. 839, with illustrations. Price $25.00. Paul B. Hoeber, Medical Book Department of Harper & Brothers, 49 East 33rd Street, New York 16, 1959.

"Designed to bridge the gap between the elementary text and the multiple-volume reference work," this book represents a major endeavor in the field of radiology texts. Its authors hope for a wide audience: practicing physicians and surgeons, those taking postgraduate specialty training, and undergraduate medical students. To the radiologist the book would serve only as a basic information source; it would not be intended to present startling new advances. However, for others less well equipped in the specialty the book should prove invaluable.

The material included is general: roentgen anatomy of the various body divisions, descriptions of disease processes as they relate to what is seen on the x-ray film, "all of the common and most of the unusual conditions and diseases with positive roentgen findings," differential diagnosis, and methods of roentgen examination. The fine quality of the x-ray reproductions deserves comment: this feature alone is a high recommendation for such a text.

The book should have no trouble in being established as a "standard in its field," as the phrase goes. Its information is thoughtfully chosen and adequately presented, and the audience is, to some extent at least, ready made.

▶ ARTHRITIS, MEDICAL TREATMENT AND HOME CARE. By John H. Bland, M.D. Cloth. Pp. 208 with illustrations. Price $4.95. The Macmillan Company, 60 Fifth Avenue, New York 11, 1960.

In this monograph the family physician will find set down in an orderly and systematic way everything which will aid him in arranging a program of treatment for his arthritic patient. While the author's aim is to provide the patient and his family with the necessary knowledge and technics for successful treatment of the disease, deviation from this is quite obvious. Certain portions are designed for the family

physician, and others could be beneficial to the above-average patient. Therapeutic measures are set forth in an excellent fashion, and the philosophic approach to the disease is wonderfully laid out, but unless these are communicated to the patient with understanding, the book fails to serve its intended purpose.

The author covers such items as drugs useful in rheumatoid arthritis, psychotherapy, orthopedic management, essential general measures and specific measures, physical therapy, and diet in the various forms of arthritis and rheumatism.

▶ THE HEINZ HANDBOOK OF NUTRITION. A Comprehensive Treatise on Nutrition in Health and Disease. Cloth. Pp. 439 with illustrations. Price $5.75. Published for H. J. Heinz Company by The Blakiston Division, McGraw Hill Book Company, 330 West 42nd Street, New York 36, 1959.

The subject matter of this book is organized into five parts: (1) the basic physiology and biochemistry of the human body as it relates to food intake and utilization; (2) the various nutrients, their sources, metabolism, physiology, and interrelationships; (3) human nutritional requirements and nutrition under varying conditions of health and in periods of physiologic stress; (4) nutrition in disease—the relationship between nutrition and specific diseases and the practical therapeutic and preventive aspects of special diets; and (5) miscellaneous, but essential, aspects of nutrition not directly related to the first four subdivisions.

This book is not highly technical, but the practicing physician along with the dietitian and nutritionist will find it practical as a reference book and teaching aid for students of nutrition, medicine, nursing, home economics, and food technology.

▶ Ciba Foundation Colloquia on Ageing. THE LIFESPAN OF ANIMALS. Volume 5. Editors for the Ciba Foundation: G. E. W. Wolstenholme, O.B.E., M.A., M.B., M.R.C.P.; and Maeve O'Connor, B.A. Cloth. Pp. 370, with illustrations, and Cumulative Index to Volumes 1-5. Price $9.50. Little, Brown and Company, 34 Beacon Street, Boston, 1960.

The fifth and final volume of the Ciba Foundation Colloquia on Ageing is now available. This book contains, in addition to the main discussion, cumulative indexes of all five volumes of the series. This particular book includes papers and discussions on the lifespan of a wide variety of animals, birds, and insects, from English thoroughbred horses to the old laboratory standby, *Drosophila subobscura*. There are also papers on the relation of lifespan to brain weight and body weight in mammals, parental age effects on man, some actuarial aspects of human lifespan, and an appendix with notes on some mathematical mortality models.

The purpose of the whole series has been to point out the areas where research is yet needed as well as to collect into one place the information now available. The clinical applications of this particular volume are negligible; however, eventually research of this type will inevitably affect every clinician who must deal with geriatric problems. The Ciba Foundation is to be commended for its fine work on this and many other forward-looking subjects.

▶ A DOCTOR DISCUSSES MENOPAUSE. By G. Lombard Kelly, A.B., B.S. Med., M.D., President Emeritus and formerly Professor of Anatomy, Medical College of Georgia; formerly Research Associate in Anatomy, Cornell University Medical School; member American Association of Anatomists; contributor to scientific journals in the fields of Physiology and Endocrinology. Paper. Pp. 90, with illustrations. Price $1.50. The Budlong Press, 5428 North Virginia Avenue, Chicago 25, 1959.

It appears that the author has a great deal of empathy when it comes to the problems faced by the middle-aged woman. He describes the menopause as a normal growth phase in a woman's life cycle in nontechnical, readable terms. In seventeen short chapters he discusses such items as physical symptoms, the onset and duration of the menopause, the importance of glandular changes, drugs and feminine hygiene, early detection of cancer, sex life and the menopause, and the perfecting of marriage. Perhaps of equally great importance is the entire psychologic approach to this subject matter along with the hopefulness of a useful life ahead for the woman when her reproductive years cease.

This constructive book should be placed in the hands of the patient and her husband during the emotional strains and sexual problems of a woman in her middle forties. Physicians will want a stock supply on their shelves, and in order to acquaint them with this book, a complimentary copy will be sent to physicians writing on their stationery to the publisher requesting a copy.

▶ NEW METHODS OF STUDYING GASEOUS EXCHANGE AND PULMONARY FUNCTION. By Alfred Fleisch, M.D., Professor at Lausanne University, Director of the Physiological Department, Lausanne, Switzerland. Cloth. Pp. 116 with illustrations. Price $5.75. Charles C Thomas, Publisher, 301-327 East Lawrence Avenue, Springfield, Illinois, 1960.

For many years Dr. Fleisch has devoted his attention to the study of basal metabolism, pulmonary function and respiratory exchange, and the cardiovascular function and circulation. Connected with such a research was the checking of the accuracy of the instruments which he used. Finding that many did not stand up to severe tests of accuracy, he began to build his own, based on principles he first formulated.

As a result he built and tested the metabometer, the metabocalculator, ergostat, pneumotachograph, spirometer, totalizer, electric kymograph, metabograph, and orthochronograph. These are fully explained in this text, together with the principles involved in their use. For example, he suggests that time intervals between events which recur periodically should be recorded directly as ordinates. Thus

for the heart movement, time intervals between pulses are recorded as ordinates, thus making it immediately and accurately apparent whether the physician deals with a regular heart action or with an arrhythmia.

The physician whose primary goal in clinical practice remains the early diagnosis of sickness will find this text translated by Charles Corsi very beneficial. He will want it in his own library or in that of his hospital.

▶ THE OLDER PATIENT. By 21 authors. Edited by Wingate M. Johnson, M.D., Chief of Staff, Private Diagnostic Clinic, and Professor Emeritus of Clinical Medicine, Bowman Gray School of Medicine of Wake Forest College. Cloth. Pp. 589 with illustrations. Price $14.50. Paul B. Hoeber, Inc., 49 East 33rd Street, New York 16, 1960.

The medical importance of our aging population is recognized through the formation of various geriatric committees, yet it is paramount that a volume such as this be available for use by those caring for older patients. This volume deals not only with the principal physical ailments of elderly people, emphasizing the diagnostic and therapeutic aspects, but also with their socioeconomic and emotional problems. It is intended to supplement rather than serve as a textbook.

Each of the twenty-six chapters is written by a contributing author who is a specialist in his field. These chapters cover such items as treatment of the older patients, their nutrition, infectious diseases, common dermatologic problems, ocular problems, abnormalities in blood pressure, diseases of the heart, blood vessels, pulmonary and metabolic diseases, and diseases of the endocrine system. And among others is a chapter on helping the older patient adjust to age.

This book, which is intended to be used by internists and the general practitioner, no doubt will aid all physicians, and particularly family doctors, in helping their older patients make the necessary adjustments to age.

▶ NIGHT VISION. By Gaetan E. Jayle, Professeur de Clinique Ophtalmologique á la Faculté de Médecine de Marseille; Directeur de la Clinique Ophtalmologique et du Centre d'étude de la Vision Nocturne de Marseille; Albert G. Ourgaud, Ophtalmologiste de Hopitaux, Professor Agrégé d'Ophtalmologie á la Faculté de Médecine de Marseille; L. F. Baisinger, M.D., Ophthalmologist, Bakersfield, California; and William John Holmes, M.D., Ophthalmologist, Honolulu, Hawaii. Cloth. Pp. 408, with illustrations. Price $13.50. Charles C Thomas, Publisher, 301-327 East Lawrence Avenue, Springfield, Illinois, 1959.

This monograph is a most outstanding contribution to ophthalmologic literature. Written by Dr. Jayle and Dr. Ourgaud for the French Ophthalmological Society, it has been translated and condensed by Dr. Baisinger and Dr. Holmes. The subject of night vision is difficult, vague, and chaotic, which the reader can readily see, and it is weighed down with theories and complicated by experimental work wherein different investigators have elaborated a multiplicity of instruments which measure several different functions. This book provides a critical assessment and an integrative judgment of a multitude of incompatible theories and inco-ordinated observations.

The first few chapters revolve around general characteristics of night light, biochemical data, and retinal changes in illumination and darkness along with retinal metabolism. Other subjects considered are physiologic variations of night vision, such items as those due to race and age, subjective factors such as intra- and inter-individual variation, and action of drugs.

The practical application of the foregoing material centers around the maintenance and improvement of night vision for the principal types of night activity, which are driving, aerial activities, railway transportation, and lighting of mines. The book ends with a chapter on the technics of examination of night vision.

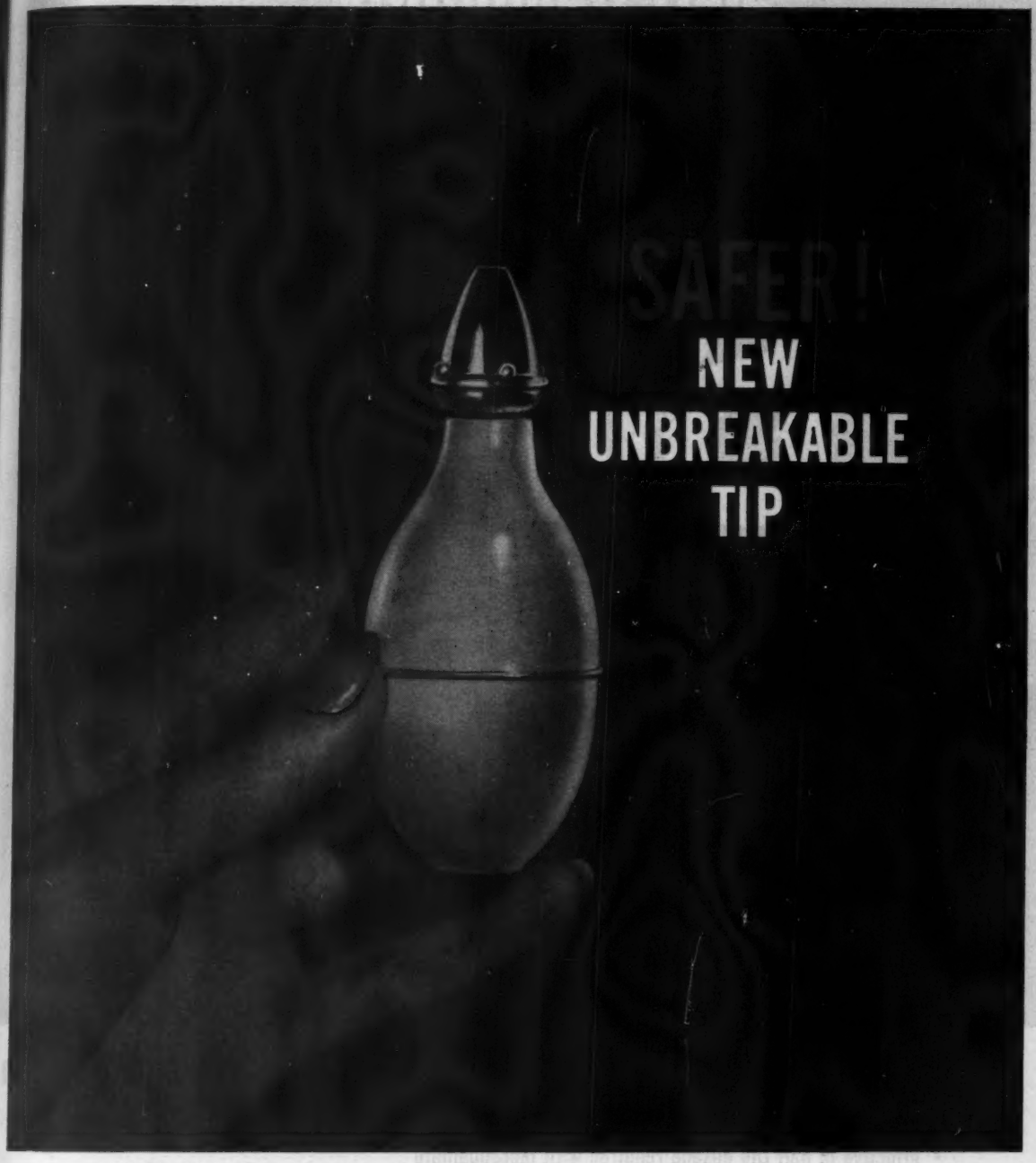
The physiologist as well as the ophthalmologist should find this book invaluable as a guide and source of information.

▶ MODERN NUTRITION IN HEALTH AND DISEASE. Edited by Michael G. Wohl, M.D., Chief of Human Nutrition, Division of Biological Chemistry, Hahnemann Medical College and Hospital; Chief of Nutrition Clinic, Philadelphia General Hospital; former Clinical Professor of Medicine (Endo.), Philadelphia General Hospital and Temple University School of Medicine; Consultant Physician in Medicine, Albert Einstein Medical Center; chairman, Commission on Cardiovascular and Metabolic Diseases, Medical Society of the State of Pennsylvania, and chairman, Committee on Nutrition and Metabolism, Philadelphia County Medical Society; and Robert S. Goodhart, M.D., Scientific Director, The National Vitamin Foundation, Inc.; Physician-in-Charge, Washington Heights Nutrition Clinic, New York City Department of Health, Lecturer in Public Health and Administrative Medicine, Columbia University, School of Public Health, New York. Ed. 2. Cloth. Pp. 1152 with illustrations. Price $18.50. Lea & Febiger Company, Washington Square, Philadelphia 6, 1960.

Data compiled in such a comprehensive manner by known authorities are invaluable for both general practitioners and specialists because they are all-inclusive in subject matter. Food that people eat becomes of vital importance for it has a direct bearing on the maintenance of optimum health and the prevention and treatment of disease. This second edition, in keeping with the first, has as its objective the presentation of up-to-date discussion of every aspect of nutrition and the provision of sound knowledge of both current advances in and the practical application of that science. This edition has two entirely new sections; one is devoted to chemical and other additives to foods, and the other is a discussion of dietary factors in the production of atherosclerosis and coronary artery disease.

The book is divided into three main sections: normal nutrition, nutrition in disease, and nutrition in periods of physiologic stress.

Even though voluminous, this book is easy reading and is carefully outlined so that specific subjects are available for quick reference.



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(4) Decreased toxicity (systemic and local irritant action, especially of the gastrointestinal tract).

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1. Modell, W.: Am. J. Cardiol. *3:*139 (Feb.) 1959.

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ENCOURAGING NEWS IN ANGINAL THERAPY

Reporting on extensive clinical trial of ISORDIL, a group of important investigators found "impressive improvement in 67% of patients . . . ,"[1] favorable response in a total of 75%.

1. Fisch, S., Boyle, A., Sperber, R., and DeGraff, A. C.

In their thoroughly documented report on 60 angina patients studied by open clinical trial, Fisch, Boyle, Sperber, and DeGraff found improvement in 75% of patients; 18% did not respond. Minor side reactions (mostly headache) hindered evaluation in only 7%.

Average Dosage Low, but Individualization Required

Average effective dose of ISORDIL was 10 mg. q.i.d.; 26% of patients received higher doses, 16% lower doses. Of all the patients, 87% received and tolerated 5 to 15 mg. q.i.d.

Headache Commonest Side Effect, Easily Relieved

Although headache occurred initially in 27% of patients studied, it caused discontinuance of ISORDIL in only 4 patients. Continued therapy, adjustment of dosage, or use of acetylsalicylic acid relieved headache in all other cases.

Other Studies Confirm Results, Establish Additional Benefits

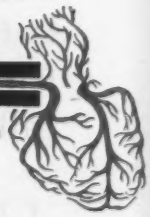
Maintenance of active coronary vasodilatation by ISORDIL, as shown by Leslie,[2] Albert,[3] and Fremont,[4] virtually eliminates periods of unprotection. Benefits are apparent as early as 15 minutes, persist for at least 4 hours. No lag in onset . . . important during early morning and postprandial stress.

References: 1. Fisch, S., Boyle, A., Sperber, R., and DeGraff, A.C.: Presented at the annual meeting of the American Therapeutic Society, Miami Beach, Florida, June 10, 1960. To be published. 2. Leslie, R.: Submitted for publication. 3. Albert, A.: In Manuscript. 4. Fremont, R.E.: To be published.

TABLETS

ISORDIL®

Isosorbide Dinitrate, Ives-Cameron



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**A superior vanishing cream base that approximates natural skin oils—Veriderm*
combined with Medrol†**

the corticosteroid that hits the disease, but spares the patient

Veriderm Medrol

Upjohn

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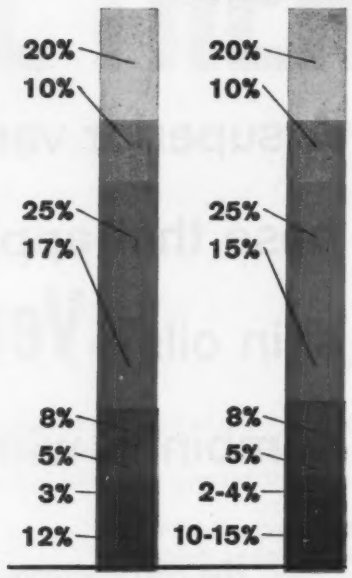
†TRADEMARK, REG. U. S. PAT. OFF.

Veriderm, an original development from The Upjohn Research Laboratories, approximates qualitatively and quantitatively the oily constituents found in normal human skin.

CONSTITUENT	VERIDERM	HUMAN SKIN LIPIDS (Approximate)
I. Free Fatty Acids		
A. Unsaturated	20%	20%
B. Saturated	10%	10%
II. Saponifiable Material		
A. Triglyceryl esters of fatty acids	25%	25%
B. Other esters of fatty acids	17%	15%
III. Nonsaponifiable Material		
A. Hydrocarbons		
1. Saturated	8%	8%
2. Unsaturated	5%	5%
B. Free Cholesterol	3%	2-4%
C. Higher mol. wt. alcohols (liquid and solid)	12%	10-15%
	100%	100%



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- Corrects dry skin conditions associated with many dermatoses
- Less greasy than an ointment
- Less drying than a lotion

In Veriderm Medrol, the outstanding anti-inflammatory agent Medrol (methylprednisolone acetate) is available for the first time for topical corticotherapy. The great potency of Medrol (5 times that of hydrocortisone) and speed of action make it ideally suited for dermatological use.

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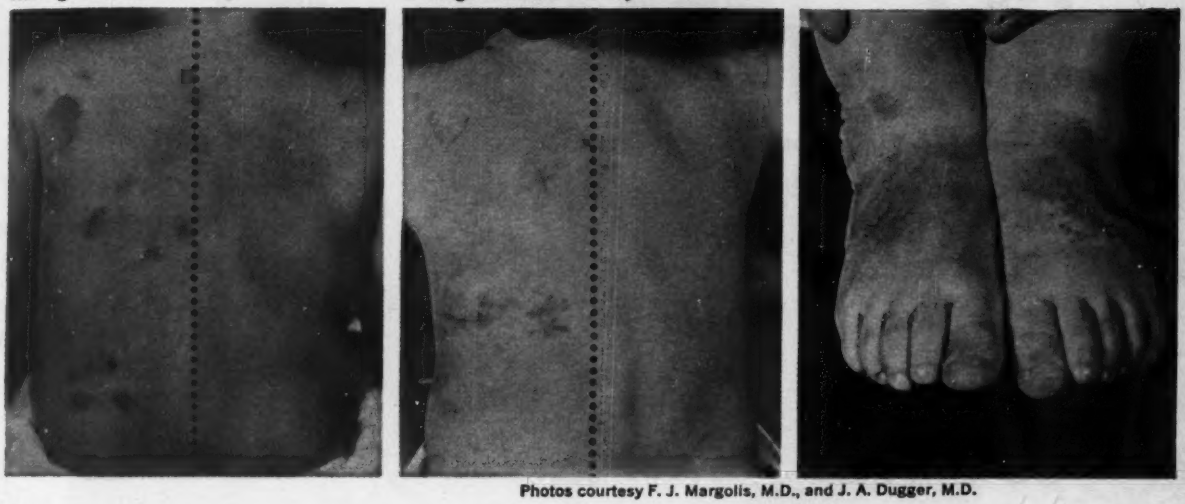
Infantile eczema (3 months duration) after 9 days on Veriderm Medrol 1% b.i.d. on right side of body. Itching controlled in 1 day.

Infantile eczema (6 months duration; unresponsive to previous medication, both topical and systemic) shown after 6 days on Veriderm Medrol 1%, once a day on right side of body. Itching controlled in 2 days.



Photos courtesy F. J. Margolis, M.D., and J. A. Dugger, M.D.

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Available as:
Veriderm Medrol Acetate 0.25% and 1.0%, in 5 Gm. tubes containing 0.25% and 1.0% Medrol acetate in skin lipid base.

Veriderm Neo-Medrol Acetate 0.25% and 1.0% — for infected dermatoses — in 5 Gm. tubes containing 0.25% and 1.0% Medrol acetate plus 0.5% Neomycin sulfate in skin lipid base.

- Dramatic results in a minimum of time in allergic dermatoses
  - neurodermatitis
  - contact dermatitis
  - anogenital pruritus
  - atopic dermatitis
  - seborrheic dermatitis

Children are happier when doctors choose Fleet® Enema

They are more willing to accept this ready-to-use pediatric enema because they are spared the ordeal of complicated old-style procedures. The compact Fleet Enema takes less than a minute to give and avoids the discomfort of large volumes of liquid. Insertion is made easy and safe because of the *pre-lubricated, anatomically correct* 2-inch rectal tube.[1] Fleet Enema can be prescribed with confidence as "a safe and effective enema preparation for even small children."[2]

Widely useful for a variety of diagnostic and therapeutic purposes—even for your patients on sodium-restricted regimens.[3] Systemic absorption is negligible.[2,3]

Pediatric size, 2¼ fl.oz. *Regular size,* 4½ fl.oz. *100 cc. contains:* 16 Gm. sodium biphosphate and 6 Gm. sodium phosphate. *Also available:* Fleet Oil Retention Enema, 4¼-fl.oz. ready-to-use unit containing Mineral Oil U.S.P.

READY-TO-USE SQUEEZE BOTTLE

Fleet **FLEET® ENEMA PEDIATRIC**

1. Frech, H. C., and Lanier, L. R., Jr.: Am. J. Obst. & Gynec. 74:1146, 1957. 2. Way, W. G., et al.: Virginia M. Month. 85:291, 1958. 3. Hellman, L. D.: To be published.

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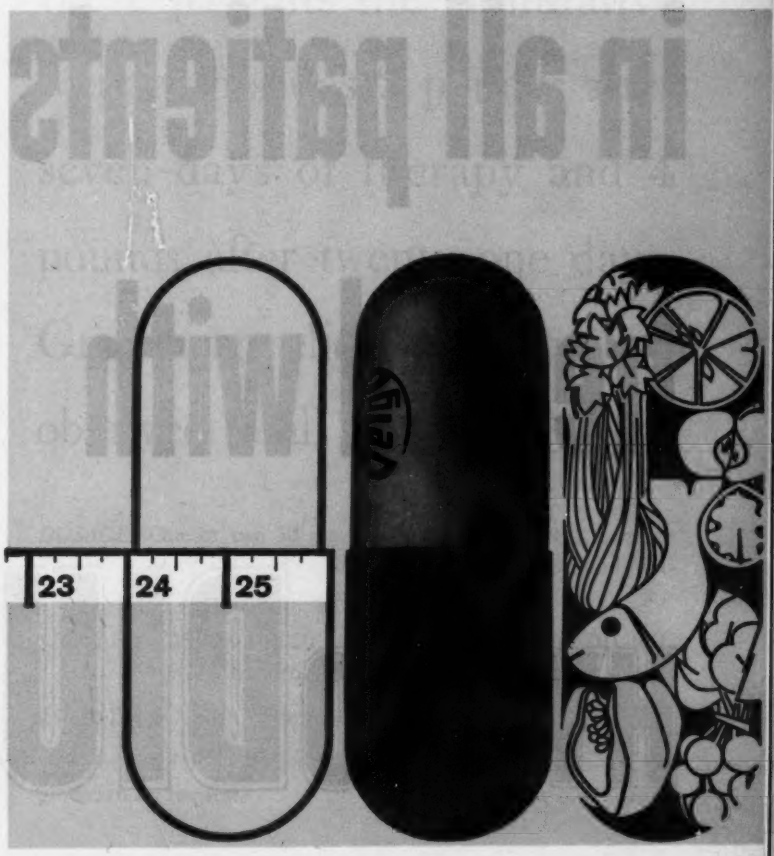
Now, Prelu-Vite helps to fortify the patient's nutritional status and sense of well-being without jeopardizing the success of the weight-reducing program.

By improving nutritional status Prelu-Vite makes it easier for the patient to retain the initial zeal for reducing...facilitates the retention of enthusiastic cooperation in pursuing therapy to a successful conclusion.

With Prelu-Vite, as with Preludin, a weight loss 2–5 times that obtainable by dietary restriction alone, is readily achieved without the occurrence of annoying side reactions.



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Availability:
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in edema of pregnancy

"gratifying relief..."

in all patients treated with

HYDRODIURIL®

HYDROCHLOROTHIAZIDE

increased potency—without corresponding increase in side effects

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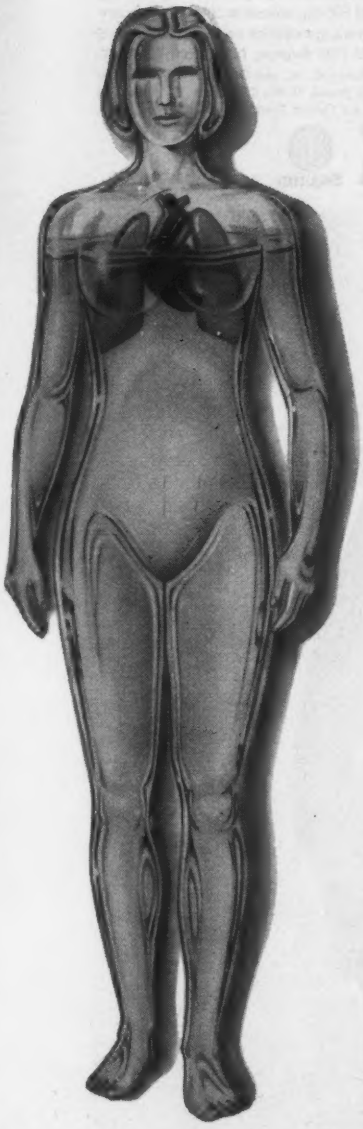
Ford, Ralph V.: Southern Med. Jl. 52: 40, (Jan.) 1959



"Hydrochlorothiazide was given to patients with edema (mild to moderate) of varied etiology..." "There were...5 women in the third trimester of pregnancy." In these patients the cumulative weight loss was 2 pounds after seven days of therapy and 4 pounds after twenty-one days. Gratifying relief of edema was observed in all patients.

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SUPPLIED: 25 mg. and 50 mg. scored tablets HYDRODIURIL (Hydrochlorothiazide) in bottles of 100 and 1,000.

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References: 1. David, N. A.; Porter, G. A., and Gray, R. H.: Monographs on Therapy 5:60 (Feb.) 1960. 2. Friend, D. H.: Clin. Pharm. & Therap. 1:5 (Mar.-Apr.) 1960. 3. Ford, R. V.: Current Therap. Res. 2:92 (Mar.) 1960.

Naturetin Squibb Benzydroflumethiazide

Naturetin ₹ K Squibb Benzydroflumethiazide with Potassium Chloride

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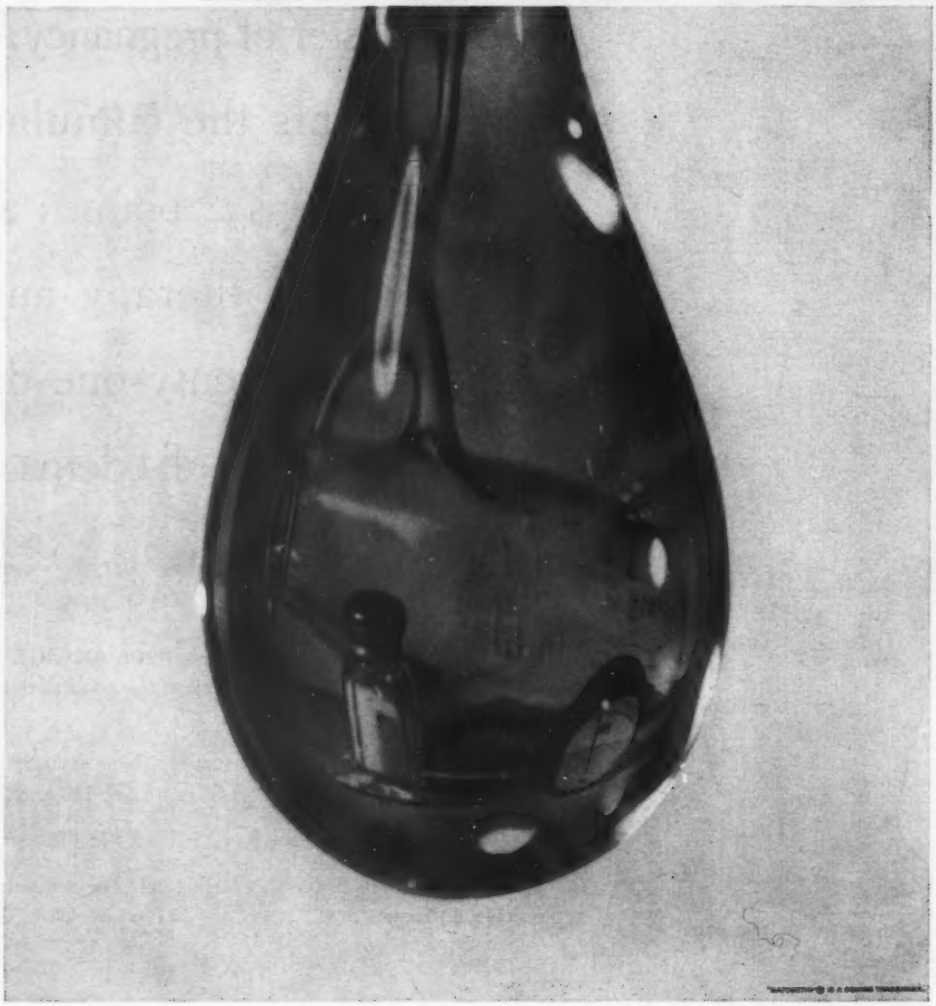

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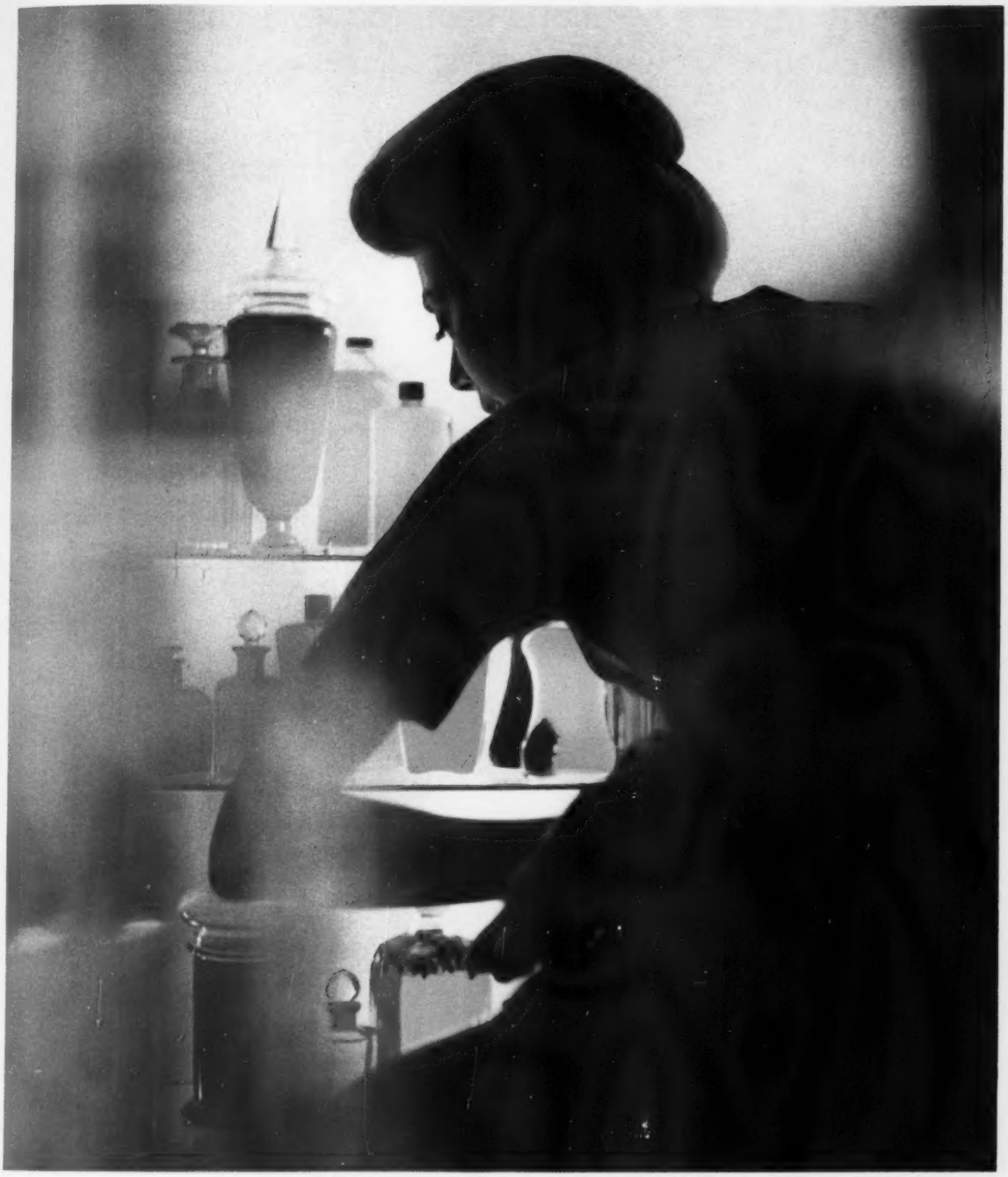
Picture of a Young Lady About to Try Her Next Dandruff Cure



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Next time
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The Right Amount of Iron

Ferrous Sulfate, U.S.P.	1.05 Gm. (Elemental Iron—210 mg.)

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Ascorbic Acid	150 mg.

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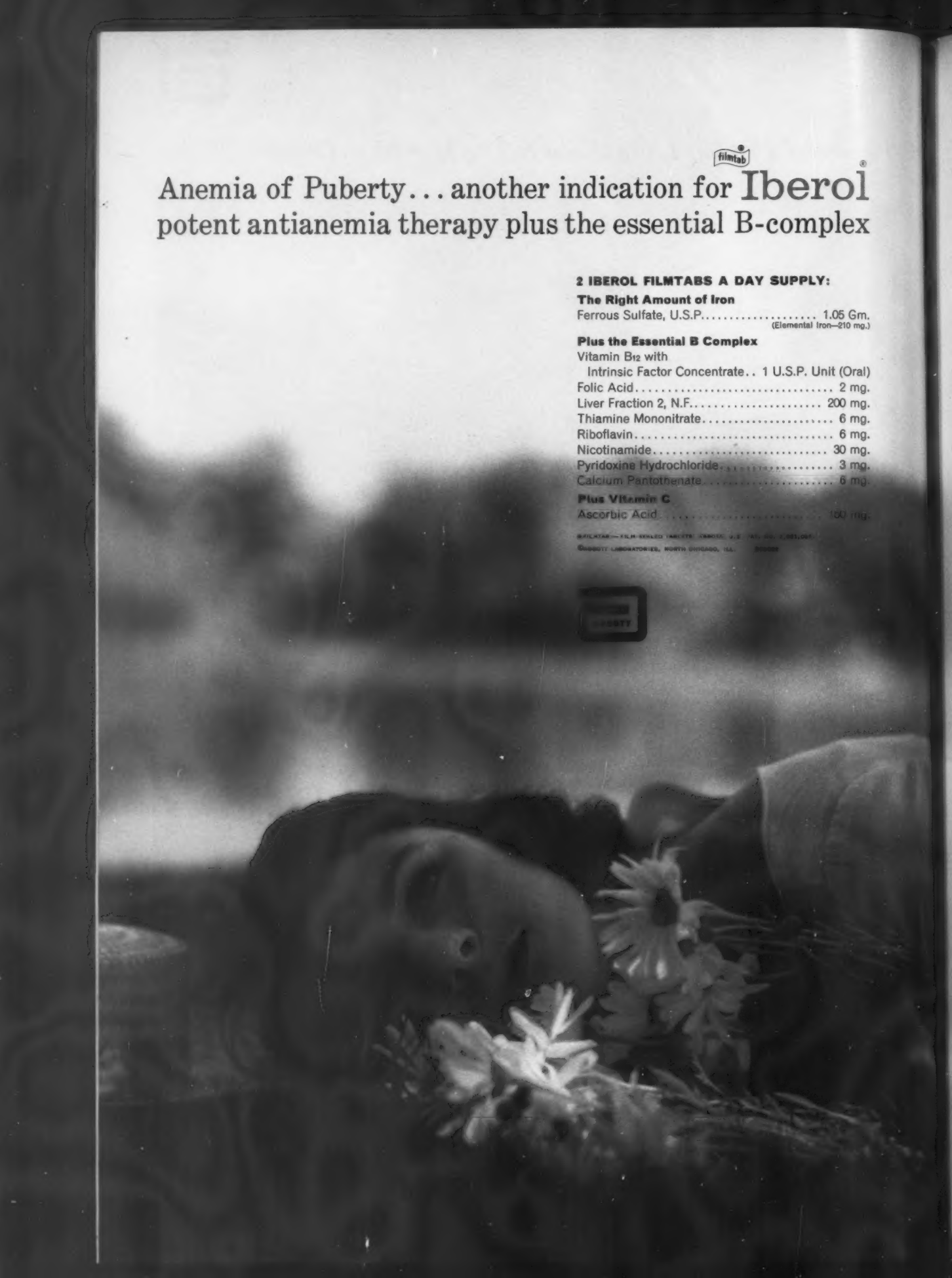

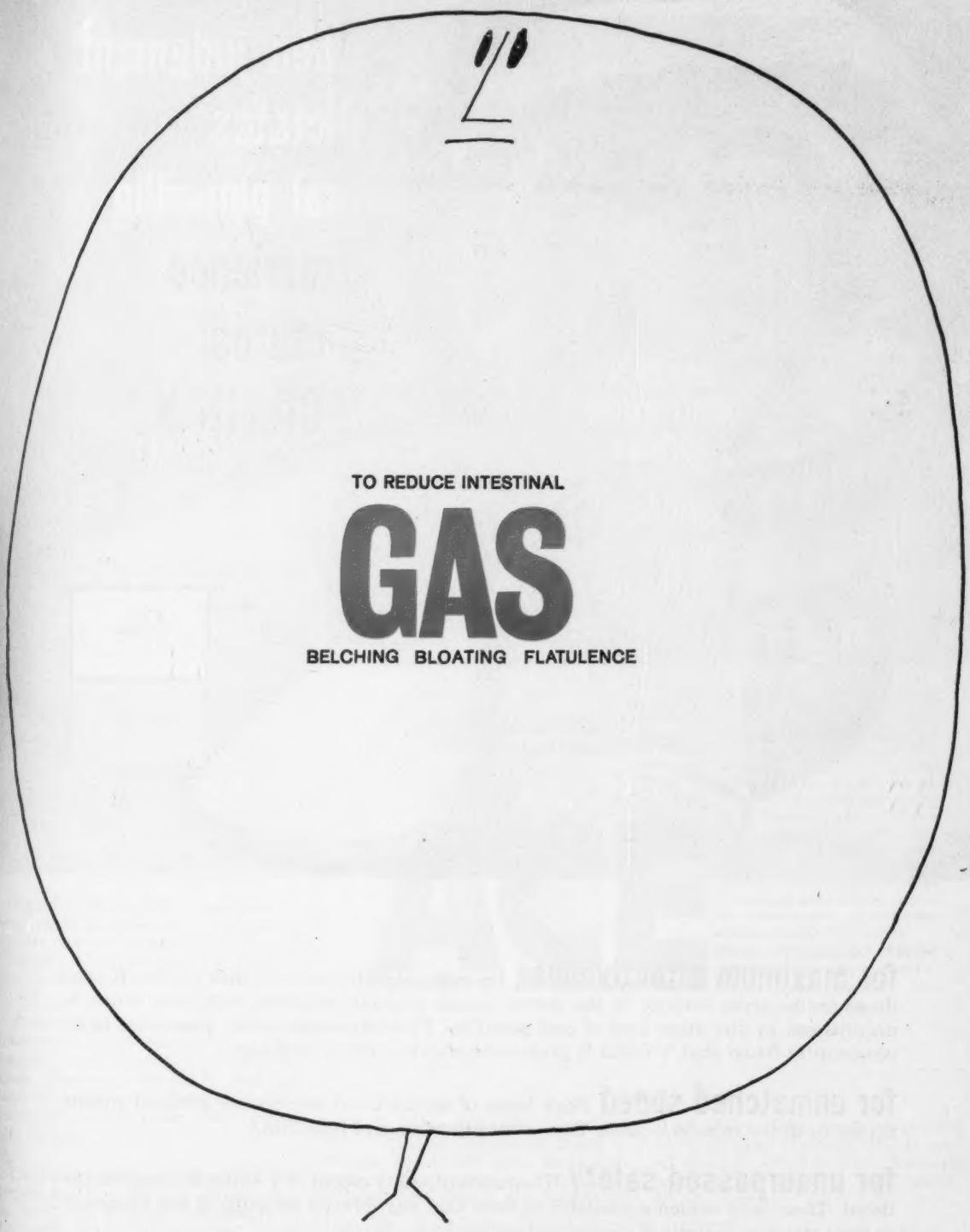

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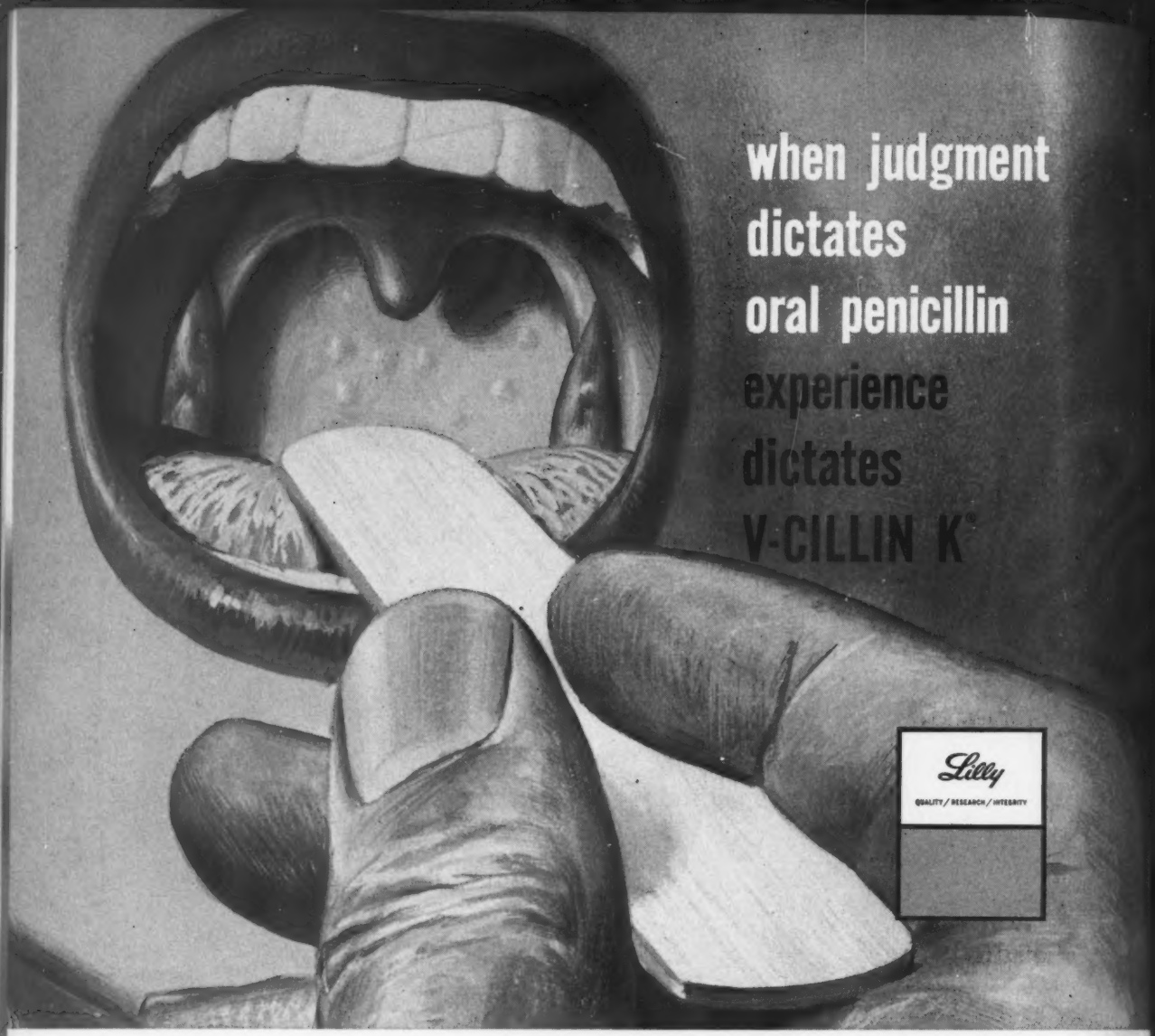

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Prescribe V-Cillin K in scored tablets of 125 and 250 mg., or V-Cillin K, Pediatric, in 40 and 80-cc. bottles.

1. Griffith, R. S.: Comparison of Antibiotic Activity in Sera Following the Administration of Three Different Penicillins, Antibiotic Med. & Clin. Therapy, 7:129 (February), 1960.

V-CILLIN K® (penicillin V potassium, Lilly)

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A-90

Conventions and meetings

American College of Osteopathic Internists, annual meeting, Denver, October 6-8. **Eastern study conference,** Warwick Hotel, Philadelphia, March 10-12. Secretary, Glennard E. Lahrson, 400 40th St., Oakland 9, Calif.

American College of Osteopathic Obstetricians and Gynecologists and American College of Osteopathic Pediatricians, annual meeting, Las Vegas, Nevada, February 6-9. A.C.O.O.G. Secretary, Arthur A. Speir, Box 66, Merrill, Mich. A.C.O.P. Secretary, Martyn E. Richardson, 9553 Lackland Rd., St. Louis 14.

American College of Osteopathic Surgeons, annual meeting, Statler Hotel, Dallas, Texas, October 30-November 3. Executive Secretary, Mrs. E. F. Martin, P.O. Box 488, Coral Gables, Fla.

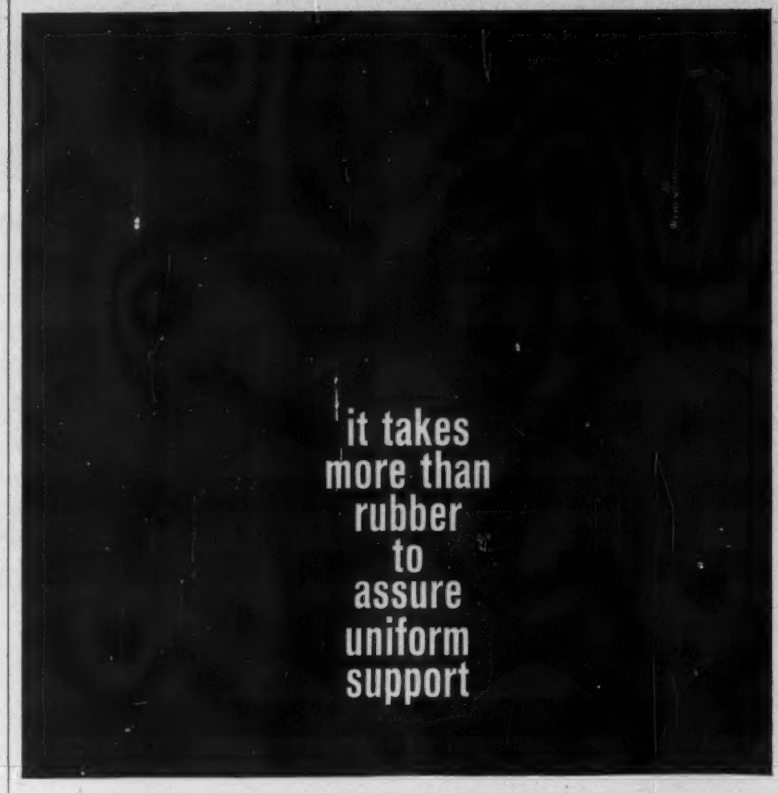
American Osteopathic Association, Sixty-Fifth Annual Convention, Carillon Hotel, Deauville Hotel, Miami Beach, Fla., January 23-26. Program Chairman, Ward E. Perrin, Chicago Osteopathic Hospital, 5250 S. Ellis Ave., Chicago 15.

Canadian Osteopathic Association, annual meeting, Alpine Inn, St. Marguerite Station, Quebec, October 6-8. Program Chairman, E. S. Detwiler, 444 Waterloo St., London, Ont.

Central States Osteopathic Society of Proctology, annual meeting, Hotel Olds, Lansing, Mich., September 16-18. Program Chairman, Ronald R. Emerick, 1228 W. Catalpa Dr., Royal Oak, Mich. Secretary, Lloyd B. Hoxie, 39011 Harper, Mt. Clemens, Mich.

Colorado, mid-year meeting, Hot Springs Lodge, Glenwood Springs, September 17-18. Program Chairman, H. V. Anderson, 211-12 Carlton Bldg., Colorado Springs. Secretary, C. R. Starks, 1459 Ogden St., Denver 18.

Eastern States Osteopathic Society of Proctology, annual meeting, Hotel Bellevue-Stratford, Philadelphia, November 5-6. Program Chairman, J. Irving Schwartz, 5756 N. Fifth St., Philadelphia 20. Secretary, LeRoy W. Lovelidge, Jr., 201 E. Orange St., Lancaster, Pa.



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Florida, annual meeting, September 26-28. Program Chairman, Ralph L. Fischer, 333 Fourth Ave., Jacksonville Beach. Executive Director, Mr. Barton K. Johns, 5009 Central Ave., Tampa 3.

Hawaii, annual meeting, Princess Kaiulani Hotel, Honolulu, October 13-14. Program Chairman, Frank O. Gladding, 116 S. King, Honolulu 13.

Indiana, annual meeting, French Lick Sheraton Hotel, French Lick, May 19-22. Program Chairman, Loyd H. Riley, Odon, Secretary, Arabelle Baker Wolf, 4840 N. Michigan Rd., Indianapolis 8.

Kansas, annual meeting, Town House Hotel, Kansas City, Kansas, September 17-21. Program Chairman, Glen D. Jewett, Cornwell Bldg., St. John. Executive Secretary, Mr. Lloyd L. Hall, 121 E. 8th St., Topeka.

Michigan, annual meeting, Pantlind Hotel, Grand Rapids, October 3-5. Program Chairman, A. H. Fuller, 202 Liberty Life Bldg., Muskegon. Executive Secretary, Mr. Floyde E. Brooker, 81 Glendale, Highland Park 3.

Minnesota, annual meeting, Lowry Hotel, St. Paul, May 4-6. Secretary, E. R. Komarek, 301 Granite Exchange Bldg., St. Cloud.

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Chlorzoxazone*

rapidly relieves both pain and stiffness . . . facilitates recovery

PARAFLEX provides effective skeletal muscle relaxation for 6 hours with a 1- to 2-tablet dose. It relieves painful muscle spasm and improves function in a wide variety of traumatic, arthritic, and rheumatic disorders. PARAFLEX is especially valuable when used in conjunction with physiotherapy and other rehabilitative procedures. Side effects are rare, almost never require discontinuance of therapy.

Dosage: ADULTS—1 to 2 tablets three or four times a day.
CHILDREN—½ to 2 tablets three or four times a day, depending on age and weight.
Supplied: Tablets, scored, orange, bottles of 50. Each tablet contains PARAFLEX, 250 mg.

*U.S. Patent No. 2,895,877

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Missouri, annual meeting, Sheraton-Jefferson Hotel, St. Louis, October 12-14. Executive Secretary, Mr. Paul D. Adams, 325 E. McCarty St., Jefferson City.

New Jersey, annual meeting, Traymore Hotel, Atlantic City, March 10-12. Program Chairman, Joseph V. Huffnagle, 101 Bowood Dr., Haddonfield. Executive Secretary, Mr. R. P. Chapman, 1212 Stuyvesant Ave., Trenton 8.

New York, annual meeting, Powers Hotel, Rochester, October 14-15. Program Chairman, Myron C. Beal, 17 Vick Park A, Rochester 7. Secretary, C. Fred Peckham, 38 E. Bridge St., Oswego.

Ohio, refresher course, Hotel Cleveland, Cleveland, October 22-23. Executive Secretary, Mr. William S. Konold, 53 W. Third Ave., Columbus 1.

Oklahoma, annual meeting, Biltmore Hotel, Oklahoma City, November 1-3. Program Chairman, Ernest T. Ross, 420 Commerce Bldg., Okmulgee. Executive Secretary, Mr. Walter L. Gray, 210-12 Braniff Bldg., Oklahoma City.

Osteopathic College of Ophthalmology and Otorhinolaryngology, annual meeting, Brown Palace Hotel, Denver, September 26-28. Executive Secretary, Arthur A. Martin, Box 222, Kirksville, Mo.

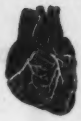
Pennsylvania, annual meeting, Sheraton Hotel, Philadelphia, November 17-19. Program Chairman, Charles Lichtenwalner, Jr., 379 Chestnut St., Pottstown. Executive Secretary, Mr. Thomas M. Fogarty, 1941 Market St., Harrisburg.

Tennessee, annual meeting, Hotel Patten, Chattanooga, April 30-May 3. Program Chairman, Martin R. Caldwell, Soddy. Secretary, Paul Grayson Smith, Pikeville.

Western States Osteopathic Society of Proctology, annual meeting, Statler-Hilton Hotel, Los Angeles, October 24-26. Program Chairman, Francis M. Neff, 2800 Pacific Ave., Long Beach 6, Calif. Secretary, Marcus S. Gerlach, 2015 State St., Santa Barbara, Calif.

Vermont, annual meeting, Montpelier Tavern, Montpelier, September 28-29. Program Chairman, Roy M. Sherburne, 9 Eastern Ave., St. Johnsbury. Clerk, Marian N. Rice, 8 Court St., Windsor.

West Virginia, mid-year meeting, Greenbrier Hotel, White Sulphur Springs, October 16-18. Program Chairman, Roy E. Eakle, Summerville. Executive Secretary, Mr. Gilbert D. Brooks, 313 Berman Bldg., Charles 1. **Two-day refresher course,** October 17-18. Address Mr. Brooks.



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Metamine® Sustained* helps you dilate the coronaries

METAMINE SUSTAINED (triethanolamine trinitrate biphosphate, 10 mg., in a unique sustained-release tablet) is a potent and exceptionally well tolerated coronary vasodilator. Pharmacological studies at McGill University demonstrated that METAMINE "exerts a more prolonged and as good, if not slightly better coronary vasodilator action than nitroglycerin . . . "[1] Work at the Pasteur Institute established that METAMINE exerts considerably less depressor effect than does nitroglycerin.[2] Virtually free from nitrate side effects (nausea, headache, hypotension), METAMINE SUSTAINED protects many patients refractory to other cardiac nitrates,[3] and, given b.i.d., is ideal medication for the patient with coronary insufficiency. Bottles of 50 and 500 tablets. Also: METAMINE, METAMINE WITH BUTABARBITAL, METAMINE WITH BUTABARBITAL SUSTAINED, METAMINE SUSTAINED WITH RESERPINE.

1. Melville, K. I., and Lu, F. C.: Canadian M.A.J., *63*:11, 1951. 2. Bovet, D., and Nitti-Bovet, F.: Arch Internat. de pharmacodyn. et therap., *83*:367, 1946. 3. Fuller, H. L., and Kassel, L. E.: Antibiotic Med. & Clin. Therapy, *3*:322, 1956.

Thos. Leeming & Co. Inc. New York 17, N.Y. *Patent applied for

State and national boards

Arizona Those interested in professional examinations should contact Russell Peterson, D.O., secretary, Osteopathic Board of Registration and Examination in Medicine and Surgery, 2747 E. McDowell Rd., Phoenix 22.

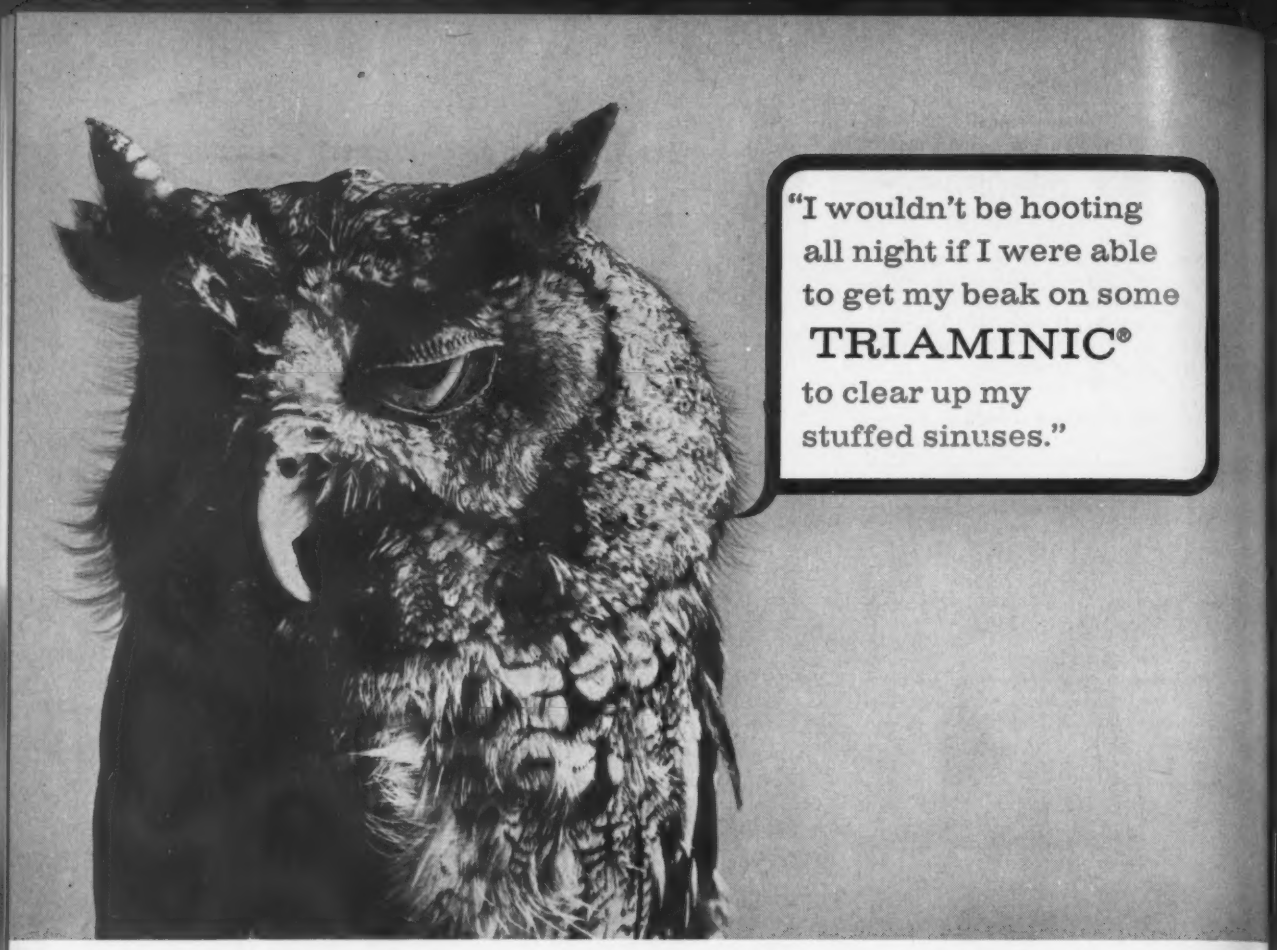
Basic science examinations September 20. Address Herman E. Bateman, Ph.D., secretary, State Board of Examiners in the Basic Sciences, University of Arizona, Tucson.

Arkansas basic science examinations October 20-21. Address Mr. A. W. Ford, commissioner, Department of Education, Little Rock.

Colorado examinations in December. Address Miss Mary M. McConnell, executive secretary, State Board of Medical Examiners, 715 Republic Bldg., Denver 2.

Basic science examinations December 7-8. Applications must be filed by November 23. Address Esther B. Starks, D.O., secretary, State Basic Science Board, 1459 Ogden St., Denver 18.

Connecticut examinations November 8-9. Address Creighton Barker, M.D., secretary, Medical Examining Board in Surgery, 160 St. Ronan St., New Haven.

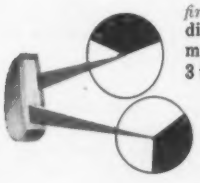


. . . and for humans with STUFFED-UP SINUSES . . .

Your patient with sinus congestion doesn't give a hoot about anything but prompt relief. And TRIAMINIC has a pharmacologically balanced formula designed to give him just that. As soon as he swallows the tablet, the medication is transported *systemically* to *all* nasal and paranasal membranes – reaching inaccessible sinus cavities where drops and sprays can never penetrate. TRIAMINIC thereby brings more complete, more effective relief without hazards of topical therapy, such as ciliary inhibition, rebound congestion, and "nose drop addiction."

Indications: nasal and paranasal congestion, sinusitis, postnasal drip, upper respiratory allergy.

Relief is prompt and prolonged because of this special timed-release action:



first – the outer layer dissolves within minutes to produce 3 to 4 hours of relief

then – the core disintegrates to give 3 to 4 *more* hours of relief

Each Triaminic timed-release Tablet provides:

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Basic science examinations October 8. Address Miss M. G. Reynolds, executive assistant, State Board of Healing Arts, 110 Whitney Ave., New Haven 10.

District of Columbia examinations December 12-13. Address Mr. Paul Foley, deputy director, Department of Occupations and Professions, 1740 Massachusetts Ave., N.W., Washington 6, D.C.

Basic science examinations in October. Address Mr. Foley.

Florida examinations in December. Address Thomas F. Sheffer, D.O., secretary, State Board of Osteopathic Medical Examiners, Las Olas Hospital, 1516 E. Las Olas Blvd., Ft. Lauderdale.

Hawaii For information on examination dates write to Richard Y. Kodama, D.O., secretary, Board of Osteopathic Examiners, 826 Keeaumoku St., Honolulu 14.

Idaho examinations November 10. Address Mrs. Nan K. Wood, director, Occupational License Bureau, Department of Law Enforcement, State House, Boise.

Illinois examinations October 11-13 at 160 N. LaSalle St., Chicago. Applications must be filed by the middle of September. Address Mr. Frederic B. Selcke, superintendent, Department of Registration and Education, Capitol Bldg., Springfield.

Iowa basic science examinations October 11 at the Capitol Building, Des Moines. Address Elmer W. Hertel, Ph.D., secretary, State Board of Basic Science Examiners, Wartburg College, Waverly.

Kansas basic science examinations in Science Hall, Kansas State College, Pittsburg, November 4-5. Applications must be filed 30 days prior to examination. Address Dr. L. C. Heckert, secretary, State Board of Basic Science Examiners, Pittsburg.

Kentucky examinations in December. Address Mrs. Ray Wunderlich, director, Medical Licensure and Registration, State Board of Health, 620 South Third St., Louisville 2.

Maine examinations November 8-9, at Augusta. Address George Frederick Noel, D.O., secretary, State Board of Osteopathic Examination and Registration, 20 Monument Sq., Dover-Foxcroft.

Maryland examinations in October. Address Christopher L. Ginn, D.O., secretary, State Board of Osteopathic Examiners, 19 W. Mulberry St., Baltimore 1.

Michigan basic science examinations October 14-15. Applications must be filed 2 weeks in advance. Address Mrs. Anne Baker, secretary, State Board of Examiners in the Basic Sciences, 116 Mason Bldg., Lansing.

Nebraska basic science examinations October 4-5. Address Mr. R. K. Kirkman, director, Bureau of Examining Boards, Department of Health, State Capitol Bldg., Lincoln 9.

Nevada basic science examinations October 4. Address Dr. Kenneth C. Kemp, secretary, State Board of Examiners in the Basic Sciences, Box 9355, University of Nevada, Reno.

New Jersey examinations October 18-21. Applications must be filed by September 28. Address Mr. Michael E. H. Sweeney, administrative secretary, State Board of Medical Examiners, 28 W. State St., Trenton 8.

New Mexico basic science examinations October 16. Address Mrs. Marguerite Cantrell, secretary, State Board of Examiners in the Basic Sciences, Box 1522, Santa Fe.

New York examinations in December. Address Dr. John W. Paige, chief, Bureau of Professional Examinations and Registrations, 23 S. Pearl St., Albany.

Ohio examinations in December at Columbus. Address H. M. Platter, M.D., secretary, State Medical Board, 21 W. Broad St., Columbus 15.

Oregon applications for reciprocity will be considered in October. Address Mr. Howard I. Bobbitt, executive secre-

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tary, State Board of Medical Examiners, 609 Failing Bldg., Portland 4.

Rhode Island examinations October 6-7 at Providence. Address Mr. Thomas B. Casey, Administrator of Professional Regulation, 366 State Office Bldg., Providence.

Basic science examinations November 9 at Room 366, State Office Bldg., Providence. Applications must be filed 2 weeks in advance. Address Mr. Casey.

South Carolina examinations November 15 at Columbia. Address Ernest A. Johnson, D.O., secretary, State Board of Osteopathic Examiners, Box 525, Summerville.

South Dakota basic science examinations first week in December. Address Gregg M. Evans, Ph.D., secretary, State Basic Science Board, 310 E. 15th St., Yankton.

Tennessee basic science examinations given every 3 months. Address O. W. Hyman, M.D., secretary, State Board of Basic Science Examiners, 62 S. Dunlap, Memphis 3.

Texas examinations in December at Ft. Worth. Address Miss Luanna Knox, assistant secretary, State Board of Medical Examiners, 1714 Medical Arts Bldg., Ft. Worth 2.

Basic science examinations October 17-18 at Austin. Applications must be filed by October 5. Address Executive Secretary, State Board of Examiners in the Basic Sciences, 201 East 14th St., Austin.

Utah examinations September 18-24. Applications must be filed 10 days prior to examination. Address Mr. Frank E. Lees, director, Registration Division, Department of Business Regulation, State Capitol, Salt Lake City 14.

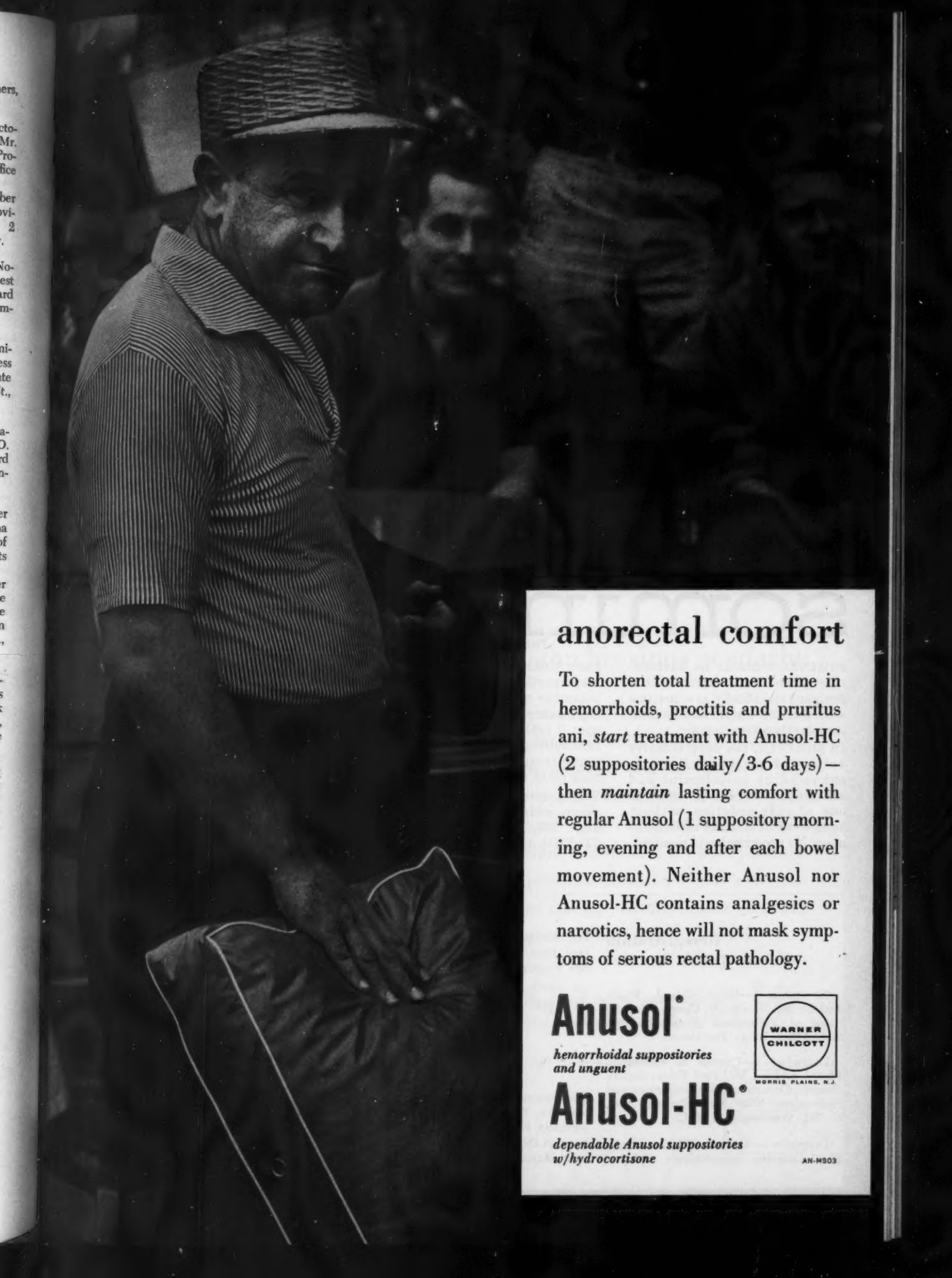
Virginia examinations in December. Address K. D. Graves, M.D., secretary, State Board of Medical Examiners, 631 First St., S.W., Roanoke.

West Virginia examinations in October. Address Donald C. Newell, D.O., secretary, State Board of Osteopathy, 137½ Main St., Oak Hill.

Wisconsin examinations in October. Applications must be filed 2 weeks prior to examination. Address Thos. W. Tormey, Jr., M.D., secretary, State Board of Medical Examiners, Room 28, 115 S. Pinckney St., Madison 2.

Basic science examinations December 10 at Marquette University Medical School, Milwaukee. Applications must be filed by December 1. Address Mr. W. H. Barber, secretary, State Board of Examiners in the Basic Sciences, 621 Ransom St., Ripon.

Wyoming examinations October 3 at Cheyenne. Address James W. Sampson, M.D., secretary, State Board of Medical Examiners, State Office Bldg., Cheyenne.



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November 1—Rhode Island, $5.00. Address Mr. Thomas B. Casey, Administrator of Professional Regulation, 366 State Office Bldg., Providence.

December 1—District of Columbia, $4.00. Address Mr. Paul Foley, deputy director, Department of Occupations and Professions, 1740 Massachusetts Ave., N. W., Washington 6, D.C.

December 1—Oregon, $20.00 residents; $5.00 inactive non-residents. Address Mr. Howard I. Bobbitt, executive secretary, State Board of Medical Examiners, 609 Failing Bldg., Portland 4.

Examination by National Board

The National Board of Examiners for Osteopathic Physicians and Surgeons, Inc. conducts Parts I and II of its examinations on the first Thursday and Friday of each May and December at the six approved colleges. Application blanks may be obtained from the secretary of the Board or the dean of the college, and the completed application blank, together with check for the part to be taken, must be in the secretary's office by the November 1 or April 1 preceding the examination.

Examinations in Part I consist of anatomy, including histology and embryology; physiology; physiological chemistry; general pathology; and bacteriology, including parasitology and immunology.

Part II consists of examinations in surgery, including applied anatomy, surgical pathology, and surgical specialties; neurology and psychiatry; public health, including hygiene; medical jurisprudence; obstetrics and gynecology; pediatrics; osteopathic principles, therapeutics, including pharmacology and materia medica.

Part III is an oral and practical examination given under the supervision of a chief examiner who is a member of the Board and by a panel of associate examiners. Subjects covered in Part III are: anatomy; physiology; pathology; osteopathic principles, therapeutics and pharmacology; surgery; ophthalmology and otorhinolaryngology; obstetrics and gynecology; physical and clinical diagnosis; public health and communicable diseases.

These are oral examinations which the candidate may take after having satisfactorily completed the first six months of a 1 year internship in a hospital approved by the American Osteopathic Association for intern training. Part III is given annually.

All candidates who are now serving an internship may file an application for Part III when 6 months of the internship have been completed. All others eligible for Part III whose internship of 1 year has been completed may file at any time. All applications must reach the office of the secretary not less than 30 days prior to the examination.

All candidates are reminded that the examinations must be completed within a period of 7 years. Candidates who took Part I in 1954 must take Part III in 1961 or forfeit the right to complete the examinations.

The dates of the 1961 Part III examinations will be announced in the November issue of THE JOURNAL and D.O.

Eligibility requirements are as follows: Part I, satisfactory completion of the first 2 quarters or trimesters of the sophomore year in an approved school of osteopathy; Part II, satisfactory completion of Part I and of the first two quarters or trimesters of the senior year in an approved osteopathic college; Part III, satisfactory completion of Part II and at least 6 months of a 1-year internship approved by the American Osteopathic Association.

Applications must be filed with the secretary of the Board not less than 30 days prior to the examination dates.

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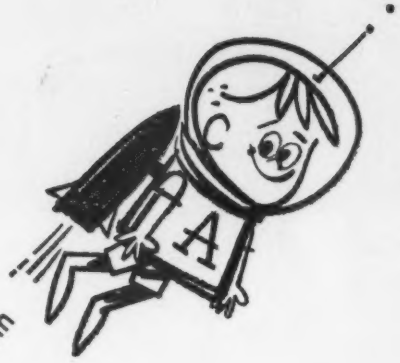

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Smallpox vaccination and its complications*

Hugh F. Leahy, M.D.
Associate Clinical Professor
Department of Pediatrics
Albany Medical College

When the busy practitioner performs frequently recurring routines, he sometimes loses sight of the serious complications which may follow a relatively innocuous procedure. This occasionally happens with such an everyday office routine as vaccination against smallpox.

*Reprinted by permission from *Health News*, November 1959.

INCIDENCE

Although smallpox is not a disease of major proportion in New York State, it is still a very serious problem. From a world health viewpoint, the disease is very common. In 1957 about 120,000 cases were reported, of which 70 per cent were in Asia. Smallpox incidence varies directly with the level of public health activity and efficiency. In the last few years the incidence in the United States has been steadily on the decline as the table shows.

REPORTED CASES OF SMALLPOX
United States 1946-1958

1946	337
1947	176
1948	57
1949	49
1950	39
1951	11
1952	21
1953	4
1954	9*
1955	2*
1956	0
1957	1*
1958	0

*These cases do not fulfill the generally accepted criteria; actually, there have probably been no reported cases in the United States since 1953.

In New York State, outside of New York City, there have been only three cases since 1939. These occurred in 1947 in conjunction with the New York City outbreak. No cases of smallpox have been reported in New York City since 1947. It appears that the low incidence in our State is due directly to the high vaccination standards enforced throughout the State.

This, however, should not give us a false sense of security because we have only to look back to 1947 to learn of an American businessman traveling by bus from Mexico City to New York City who brought the disease to New York. He died and smallpox developed in seven persons who had been patients in the same hospital as the carrier, and in four of their contacts. One of these 11 died. Thus, there were two deaths among 12 cases. Of the 12 cases in the New York City outbreak, only three had ever been vaccinated. These three had received protection more than forty years previously. New York City had not had an outbreak of smallpox for twenty years prior to 1947.[1]

Several epidemics have been reported in recent years. In 1946, a soldier returning from Japan to the United States developed smallpox; he was hospitalized in Seattle and was the direct or indirect source of infection in 43 cases. There were 65 patients in all, of whom 20 died. The 1947 smallpox scare in New York City has already been referred to. As a result of it, some 6,350,000 people were vaccinated. In 1950, an Asian seaman arrived in Scotland by ship; three days later he developed smallpox. Twenty cases developed in the hospital: eight were nurses, eight patients, one a visitor, one a laundry maid, one a visiting physician, and one a physician undertaking study in public health. Of the 20 cases, eight had never been vaccinated and six of the eight died. Brighton, England, experienced an epidemic in 1952. The infection was introduced by an RAF officer

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*From a clinical investigator's report to Merck Sharp & Dohme.

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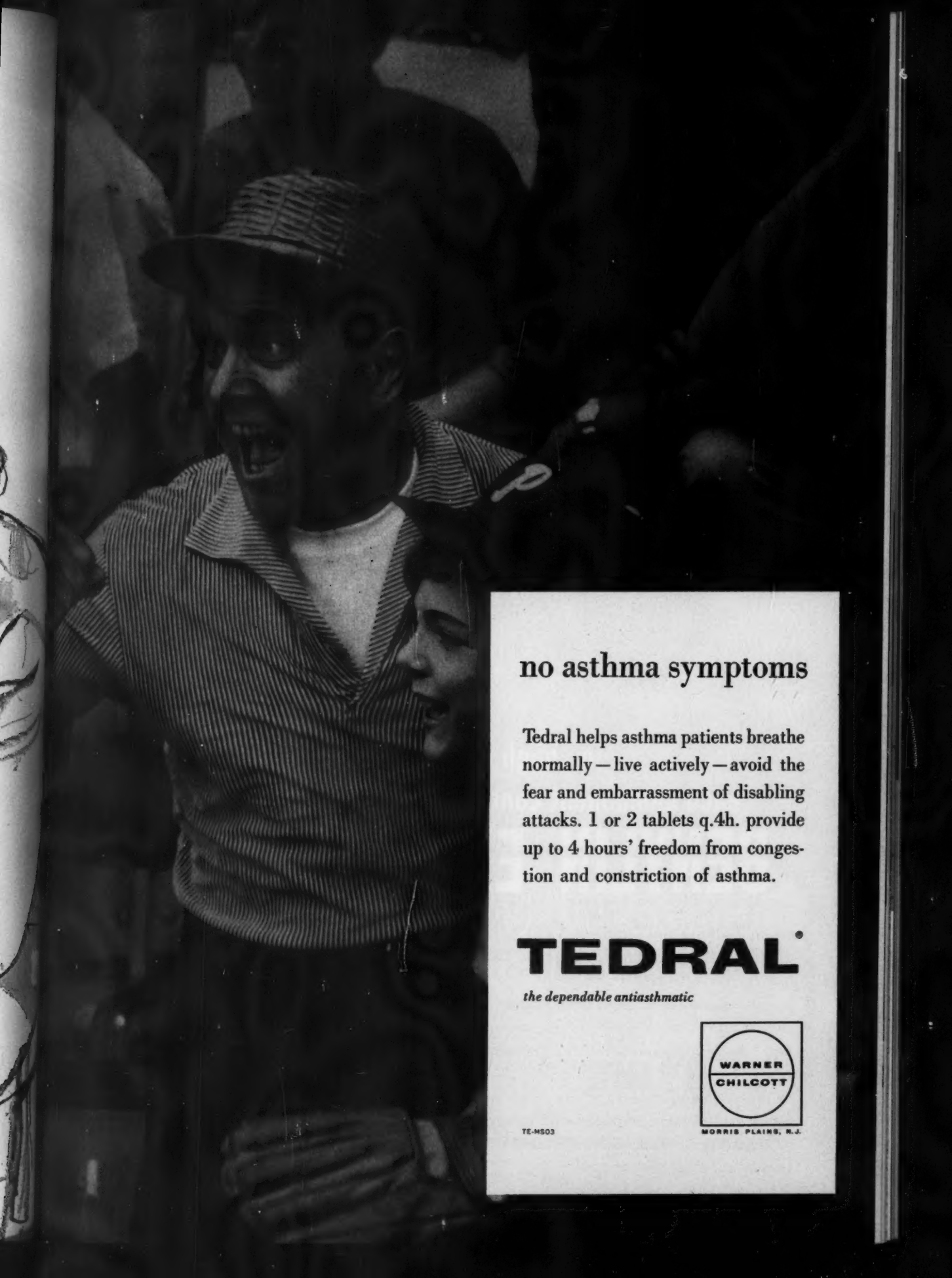

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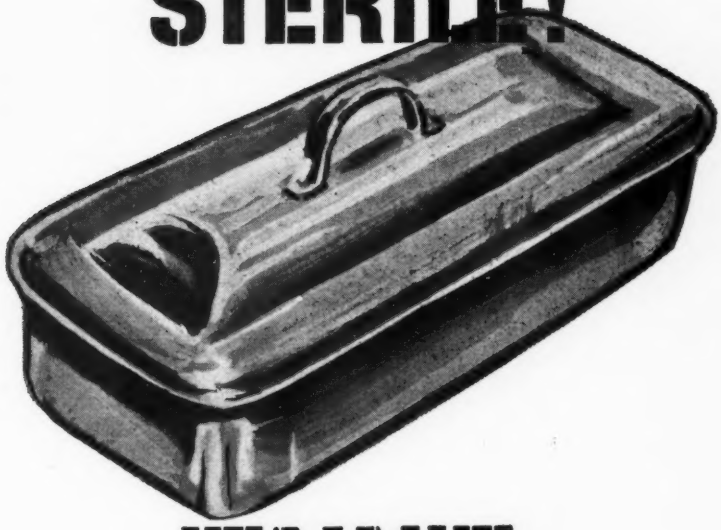

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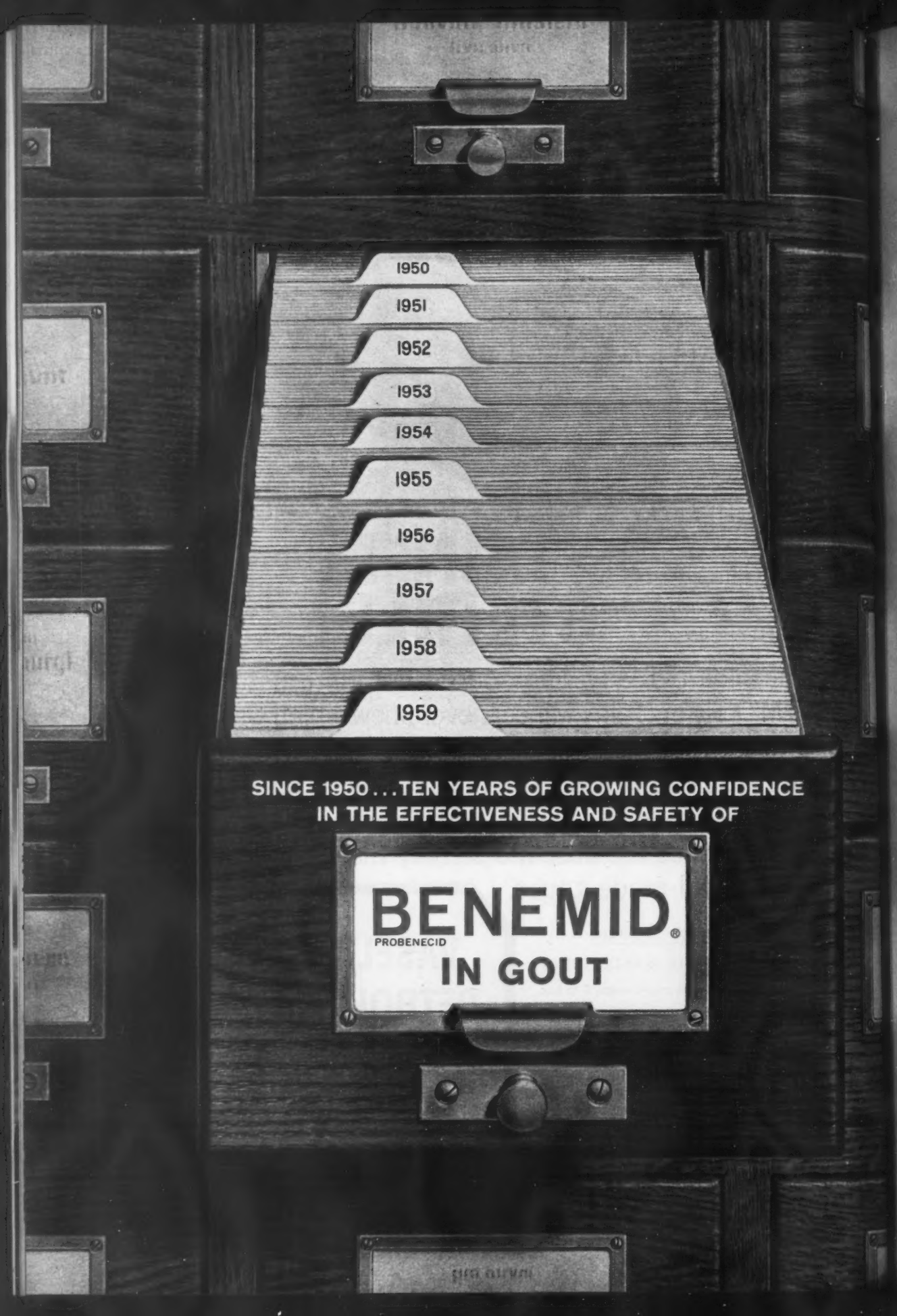

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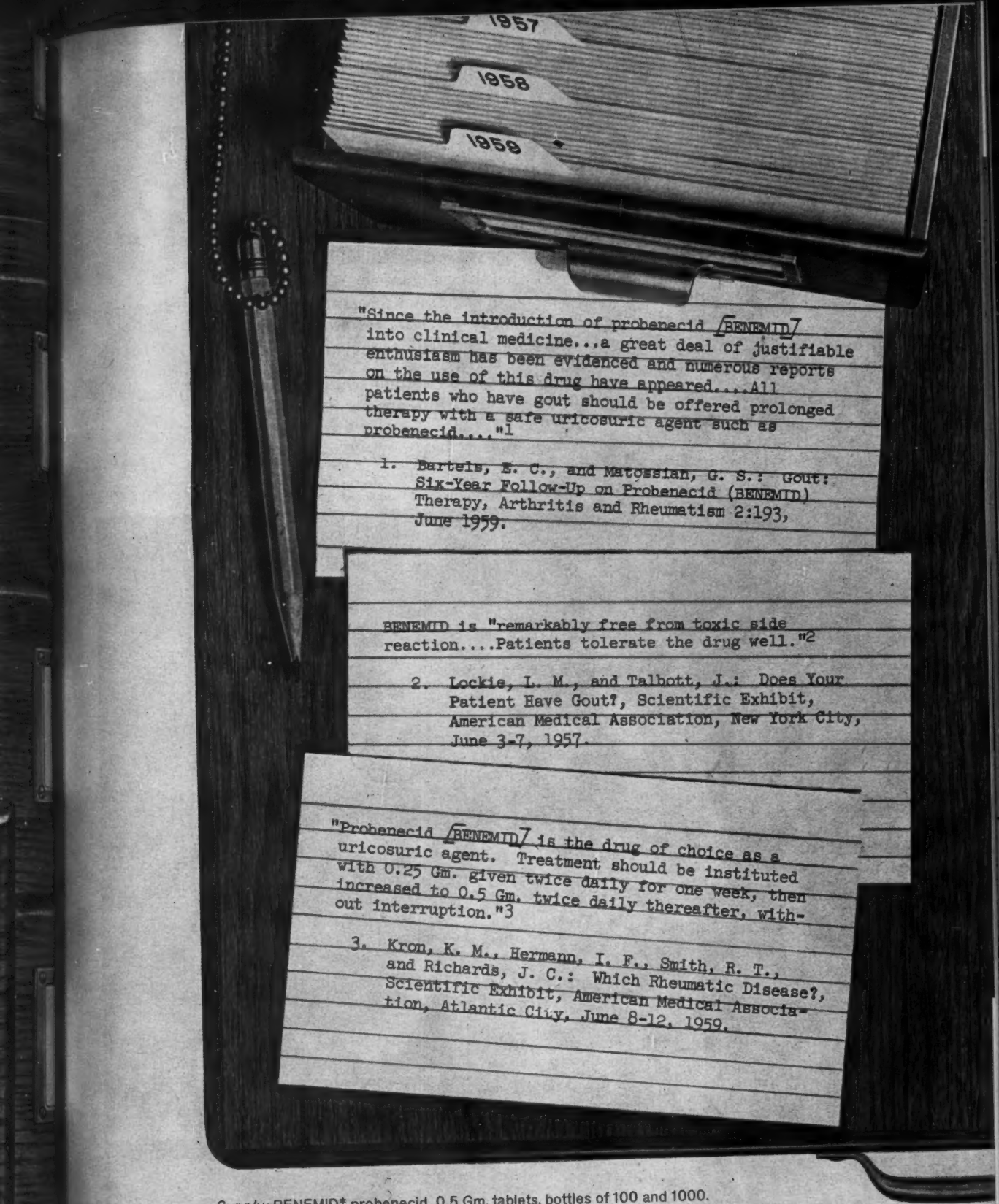
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1. Bartels, E. C., and Matossian, G. S.: Gout: Six-Year Follow-Up on Probenecid (BENEMID) Therapy, Arthritis and Rheumatism 2:193, June 1959.
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2. Lockie, L. M., and Talbott, J.: Does Your Patient Have Gout?, Scientific Exhibit, American Medical Association, New York City, June 3-7, 1957.
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3. Kron, K. M., Hermann, I. F., Smith, R. T., and Richards, J. C.: Which Rheumatic Disease?, Scientific Exhibit, American Medical Association, Atlantic City, June 8-12, 1959.

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1. Beil, A.: Management of Constipation in the Puerperium. To be published.

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References: 1. Bickerman, H. A.: in Drugs of Choice, Mosby, St. Louis, 1958, p. 557. 2. Lhotka, F. M.: Illinois M. J. *112*:259 (Dec.) 1957. 3. Fabricant, N. D.: E.E.N.T. Monthly *37*:460 (July) 1958. 4. Farmer, D. F.: Clin. Med. *5*:1183 (Sept.) 1958.

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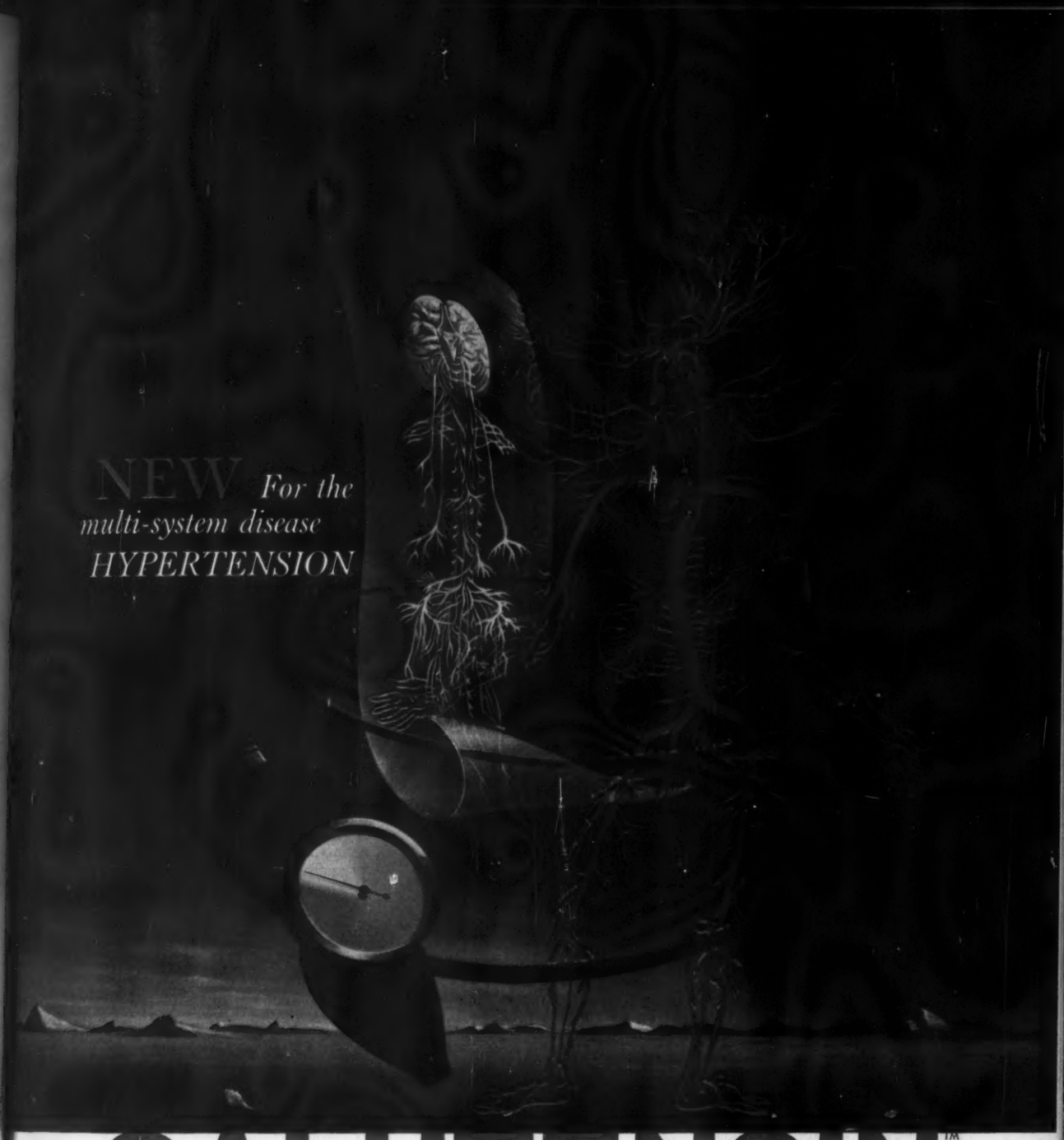

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who flew in from Karachi. The hospital became the focus for sixteen cases; nine of these were nurses, three of whom died. In addition, three hospital workers developed smallpox and died. Clothes from the original patient were sent to a laundry; six laundry workers became ill and two died. Four other patients comprising hospital personnel such as switchboard operators and ambulance drivers also developed smallpox. Of the 29 cases, 19 had not been vaccinated before exposure; eight of these died. Ten persons had been vaccinated before exposure, of whom two died. These individuals were 53-year-old people who had been vaccinated only in infancy.

In Texas, in 1949, eight infections occurred, one of which was fatal. One of the patients was the physician attending the original case. In 1955, a soldier returned to the United States from Indo-China. He had an undiagnosed febrile illness which might have been smallpox. His baby developed smallpox and was hospitalized for "pemphigus." Smallpox developed in 28 cases among the hospital patients, visitors and personnel. The disease traveled to another hospital which was the focus for 21 more cases. There was a total of 70 cases; 15 died. Among the dead were a physician, a nurse and three other hospital employees. Other recent outbreaks include one in Marseilles in 1952 (33 cases and four deaths) and one in Liverpool last year.

On January 1, 1959, the *New York Herald Tribune* reported on a smallpox scare which caused 29 American infants to be detained in New York. These infants and their mothers had just flown in from southwest Germany where smallpox was prevalent. Two persons had died in the outbreak which is reported to have started when a German physician in Heidelberg returned from a vacation in India carrying the disease with him. As recently as June 28, 1959, the Associated Press carried an article about cases of smallpox arriving in Naples from Australia.

Smallpox today is still a very serious medical problem. Although New York State is practically free of the disease, smallpox is endemic in certain parts of the world and is readily carried by international travelers. With worldwide transportation now an everyday occurrence, it is easy to understand how a case of smallpox may suddenly appear from any place on the horizon. Herrlich[3] recently (1957-58) reported a severe smallpox epidemic which began in East Pakistan and then spread to India. He saw over 500 cases of the severest kind. Many patients seemed to have their heads "covered by one single confluent lesion, with mouth and nose so obstructed by swollen tissues and purulent discharges that the drinking of water became impossible, tracheotomy was out of the question, and asphyxia could only be postponed by giving oxygen through a nasal catheter." At the height of the outbreak in Bombay, there were 450 smallpox patients, many overflowing the hospital into large emergency tents. These patients were cared for by physicians, nurses and family friends, probably all too inadequately. A shortage of antibiotics to decrease the incidence of secondary infections—abscesses, secondary pneumonia, orchitis, osteomyelitis and others—which were alarmingly high, complicated the picture.

In contrast to these epidemics, in which a surprising number of doctors, nurses and hospital personnel were involved, it is well to refer to the experience of Hoyne.[5] From 1913 through 1947 he personally attended 213 cases of smallpox at the Isolation Hospital of the Chicago Board of Health. During that time not a single employee of the hospital nor any medical student attending a clinic ever contracted smallpox because all were protected by vaccination. This is public health operating at its best.

The World Health Organization reports 18 countries were infected with smallpox by international travelers in 1956.[4] Rapid transportation especially airplane travel, is a most important consideration in the study of smallpox today. Since the disease is endemic in certain parts of the world, and since these places are only a few hours away by modern means of travel, a never relaxing vigilance must be maintained, especially at airports and seaports.

PRECAUTIONS

Although the standard pediatric textbooks caution against vaccinations when the patient has eczema, or when eczema exists in any other member of the house-

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hold, this fact is often forgotten or neglected. Holt and McIntosh[5] are most specific in this regard. They say: "It cannot be too strongly emphasized that no child should be vaccinated who has eczema or any other form of skin disease, since generalized vaccinia will almost invariably follow. Furthermore, it is best to delay vaccination of any member of the family of such a child since there is a strong probability that he will develop a generalized eruption through contact." Nelson[6] states: "Vaccination should not be performed in young premature infants or in any children during hot weather or immediately after severe infections, nor in children with eczema, impetigo or other skin lesions which might result in secondary infections. A child who has a sibling or close contact with another child with eczema should not be vaccinated unless they can be separated for the period of activity of the vaccinia lesion or the eczematous child protected by hyperimmune gamma globulin. Vaccination should be avoided in the first trimester of pregnancy."

In summary, it may be said that (1) vaccination should not be done in the presence of a skin rash in the patient or in a contact; (2) the younger the patient the less severe are the constitutional reactions; and (3) vaccination should not be performed in the first trimester of pregnancy. However, if a known exposure to smallpox has occurred, neither age nor health can be considered a contraindication to smallpox vaccination.

METHOD OF VACCINATION

Vaccination against smallpox is usually performed sometime between the third and twelfth month of life. Early vaccination is advisable because the incidence of constitutional reactions such as fever, discomfort, and localized swelling is less than in the older child. In certain European countries, especially Scotland, vaccination is frequently performed within twenty-four hours of birth. It appears the incidence of postvaccinal encephalitis following primary vaccination is greater in early childhood than in infancy.[7]

The type of vaccine usually used today is lymph obtained from the pulp of vesicles of vaccinated calves, diluted with glycerine-saline solution containing phenol. Care must be taken to insure proper refrigeration at all times since heat inactivates the vaccine.

As a rule, most children are vaccinated on the arm, at the level of the insertion of the deltoid muscle. This applies to both boys and girls, although many girls are now vaccinated on the lateral aspect of the thigh. Other sites, such as the posterior aspect of the arm over the triceps muscle and the sole of the foot, have also been suggested. Vaccination on the leg does not carry the serious implications once ascribed to it, namely secondary infections, probably because of better care of the vaccination. Soap and water, followed by acetone, or any volatile antiseptic may be used for sterilization of the area. If alcohol is used, care must be taken to wait a minute or two, lest the less-volatile denaturants remain on the skin and inactivate the vaccine virus causing an unsuccessful vaccination.

The vaccination method of choice today is the multiple puncture method. This is performed by placing a drop or two of live vaccinia virus on a previously sterilized site. The tip of a sterile needle held parallel to the arm is then gently pressed into the virus to enter the outer layer of the skin. The number of epidermal punctures suggested varies from five to 20. The needle punctures should not be deep enough to draw blood. Whatever excess vaccine remains on the arm may be permitted to stay there, or it may be wiped off with sterile gauze.

The scratch method of vaccination is not as desirable as the multiple puncture because it is more painful and is more likely to draw blood, thus producing an unsuccessful vaccination; also, it may result in secondary infection and an unnecessarily large scar. The scratch method is performed by making a single scratch through the drop of lymph (about 0.5 cm. long) but not deep enough to draw blood. Older children usually do not require a protective dressing, but this may be used in infants. It may consist of a light airy piece of sterile gauze loosely applied over the area. The area of vaccination should be kept dry until the scab falls off. Under no circumstances should a shield be used.

If contamination occurs, the area should be thoroughly cleaned two or three times daily, using alcohol. If the protective gauze dressing is held to the

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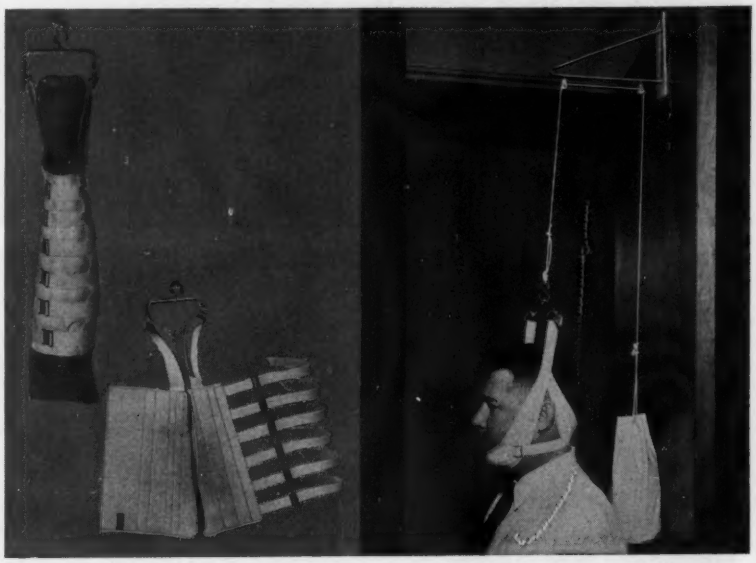

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skin by adhesive tape rather than by attachment to the clothing, and repeated changes are made, the original adhesive strips are left attached to the skin and subsequent holding strips are applied directly over the originals in order to decrease the possibility of skin irritation.

Although all gradations of reaction to vaccinia virus are found, reactions are usually classified in three groups, according to the American Academy of Pediatrics.[8] These are as follows:

1. Primary vaccinia, typical reaction or a "take."
2. Vaccinoid or accelerated reaction.
3. Early or "immediate" reaction (mistakenly termed "immune reaction"). Differentiation of the three types should be based on the time at which the areola reaches its broadest redness and not on the morphology of the lesion.

In primary vaccinia the maximal area of erythema is attained in eight to 14 days. The diameter of the areola is usually 10 to 12 cm. A vesicle is always present and progresses through the stage of pustule and crust. A scar results. This reaction indicates the individual is entirely lacking in immunity. In the vaccinoid reaction the virus propagation always occurs and is terminated by accelerated recall of immunity. The maximal area of erythema is attained in four to seven days and the diameter is usually 4 to 6 cm. A vesicle is present and a scar is usually produced, but often difficult to find later. It indicates only partial immunity. The early reaction shows a maximal area of redness between eight and 72 hours after vaccination. The diameter is usually one to two cm. A vesicle may or may not be present and no scar is produced. Where vaccine is of proved potency, it occurs in those with immunity so high that there appears to be little or no virus propagation, or else very rapid recall of immunity which permits only local propagation. Contrary to common belief, this reaction does *not* prove the existence of immunity. It may be produced by dead vaccine in anyone sensitized by successful previous vaccination.

A more complete and exact classification, even though more complex, has been suggested by Lewis and Johnson and Craig:[9]

I. *Local Reactions*
   A. Primary vaccinia
   B. Accelerated reactions
      1. Vaccinoid
      2. Immediate (formerly erroneously called "immune" reaction)
II. *Secondary Inoculation Reactions*
   A. Satellite
   B. Eczema Vaccinatum
III. *Generalized Reactions*
   A. Due to hematogenous dissemination of vaccinia virus
      1. Progressive vaccinia
         a. Agammaglobulinemic type
         b. Dysgammaglobulinemic type
      2. Generalized vaccinia
   B. Due to hypersensitivity to vaccinal proteins
      1. Roseola vaccinosa
      2. Erythema multiforme
      3. Urticaria

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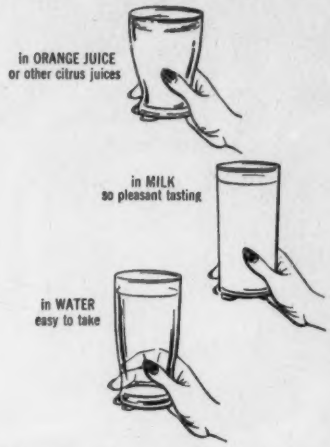

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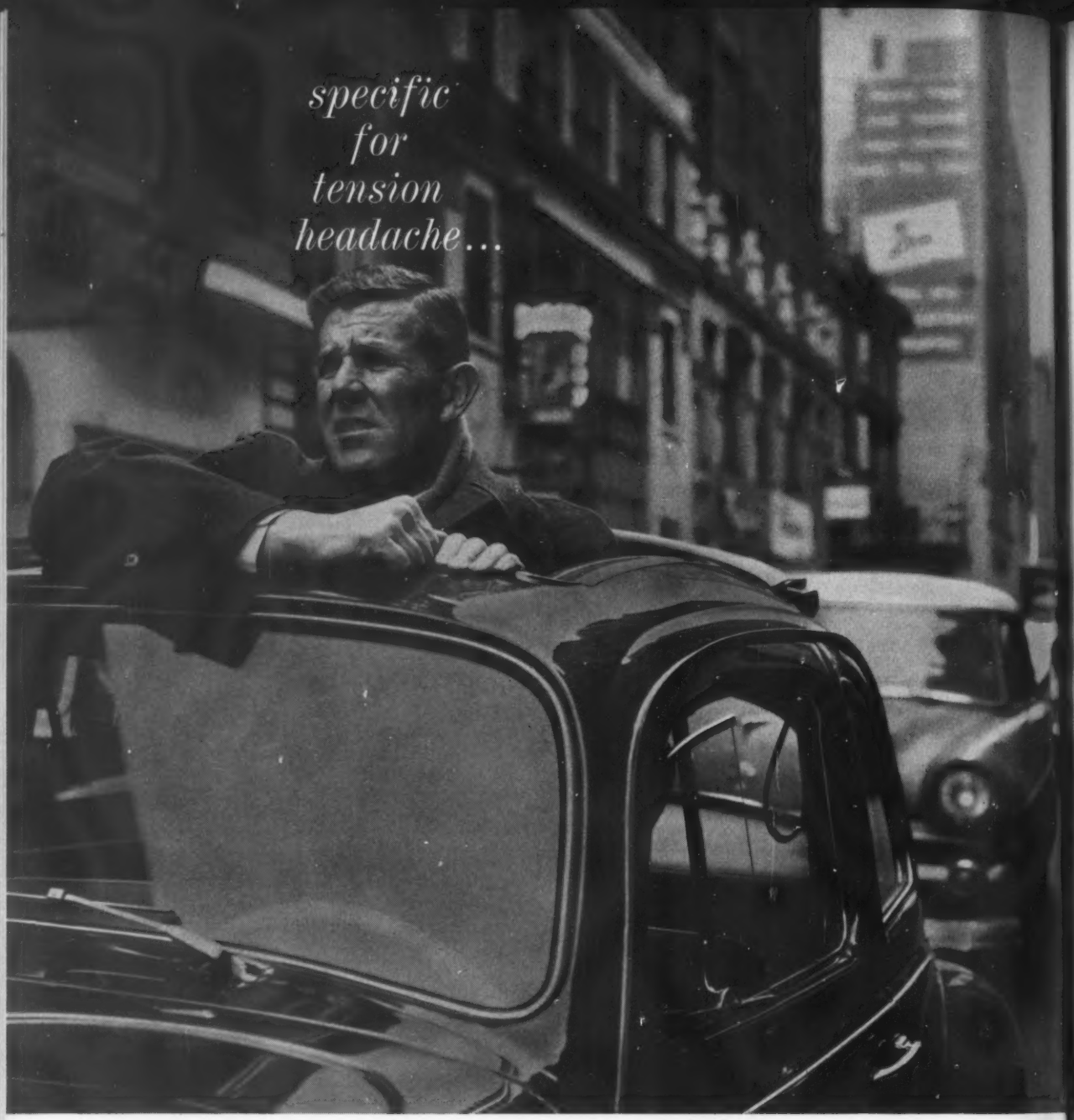
REVACCINATIONS

Revaccination should be repeated two or three times if a primary vaccination does not occur; if not successful it should be tried again a year later. Revaccination is advisable at seven years of age, at puberty and at 20-25 years of age; it is also recommended before going abroad or in the presence of an epidemic. In areas of the world where smallpox is endemic, yearly successful vaccination usually gives complete protection.

All persons who have not been successfully vaccinated within the previous five years should be revaccinated. In doing revaccinations, a greater number of multiple punctures is recommended, e.g., up to 30. Revaccinations should not be done in the general skin area of a previous vaccination because local skin immunity can be produced by an earlier vaccination, but the patient may not retain systemic immunity. If a patient is being revaccinated following an exposure to smallpox, the scratch method is said to be superior to the multiple puncture method because it is important to develop a vesicle as soon as possible. Others believe it is better to vaccinate in two or three different sites.[10]

CAUSES OF FAILURE

Failure to obtain a successful take is usually due to an inert virus. This can



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best be prevented by proper refrigeration of the vaccine beforehand and by not removing it from the refrigerator until immediately before it is used. Another cause of unsuccessful vaccination is using alcohol in preparing the area and not allowing sufficient time for complete drying. Acetone or ether is preferable to alcohol. Placentally transmitted maternal antibodies may prevent a primary vaccination reaction in the very young. If this happens, a repeated vaccination is indicated at eight to 10 months of age. Repeated failures in revaccination indicate the selection of a different site, away from the area of the previous scar. When protection is imperative, revaccination on the flexor surface of the forearm usually will result in a vaccinoid reaction in almost anyone. Very seldom does a person have a natural immunity. Many cases are on record in which repeated vaccinations were negative but the patients later developed smallpox.

Contraindications to vaccination have already been mentioned. Chiefly, these are small, weak, debilitated children or premature infants; the presence of eczema or other skin disease either in the patient or in his contacts. Nor should a normal child be vaccinated if a sibling or other contact has a skin disease, especially eczema. Vaccination should not be performed in the first trimester of pregnancy. It is better to avoid vaccination during the hot weather. If a person has not been vaccinated but has been exposed to smallpox, there are no contraindications to vaccination; it is then an imperative procedure.

COMPLICATIONS

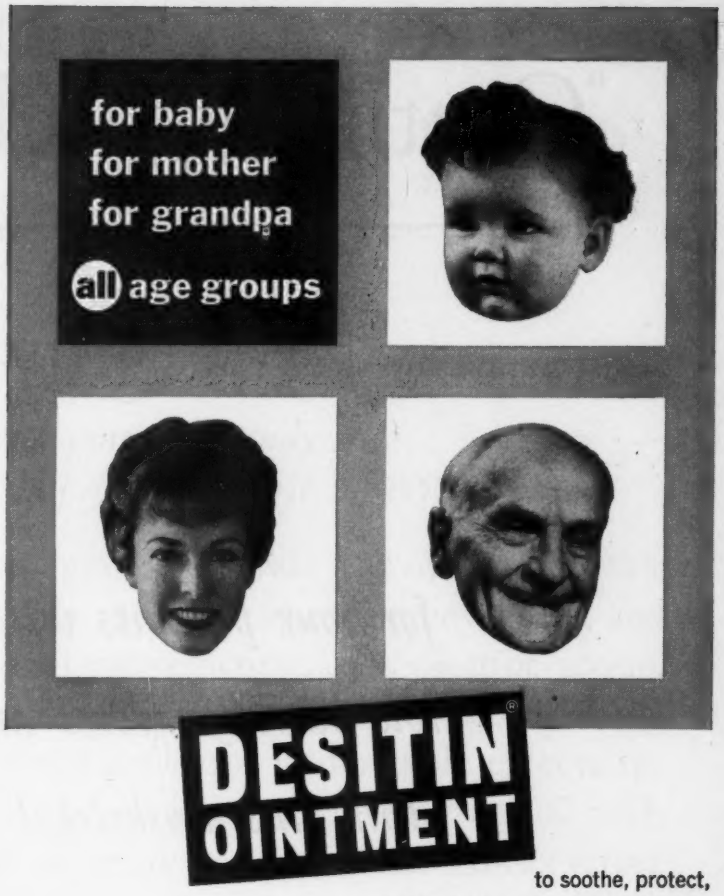
The complications of vaccination may be relatively mild or most serious. The most frequently encountered complications are single or multiple secondary vaccinations and pyogenic infections. The secondary vaccinations are usually caused by autoinoculation by scratching, or finger transfer to any part of the body to such sites as the face, lips, genitalia or extremities. The infection may be a local cellulitis but such disease as erysipelas, scarlet fever and septicemia may develop. Tetanus has been eliminated by proper care of the reaction and the avoidance of "vaccination shields;" tetanus resulting from infected lymph is no longer a concern because of better manufacturing methods. Not a single case of tetanus was reported in New York City in 1947 following 6,350,000 vaccinations.

Generalized vaccinia is characterized by a generalized eruption with crops of lesions simulating a primary vaccination. Healing without scars usually takes place rapidly, being completed in the usual time as the regular vaccination. The mortality rate in infants without eczema is very low. The incidence is about one in 100,000 vaccinations.

Eczema vaccinatum is a serious complication and consists in the widespread development of vesicles, papules and pustules in a child with eczema who has been vaccinated or exposed to a recently vaccinated person. The lesions frequently spread to noneczematous skin and the child develops high fever, toxicity and severe constitutional symptoms. Mortality may run as high as 40 per cent.

Progressive vaccinia is even more serious. It is characterized by a failure of the immunologic response of the body. The primary vaccination site fails to follow a normal course but continues to enlarge by direct extension and satellite vesicles. A viremia occurs with dissemination of new lesions to the skin, mucous membranes and internal organs. The necrosis of the tissues continues to extend over a period of months. Some cases are found in patients with agammaglobulinemia or in patients with dysgammaglobulinemia, i.e., normal gamma globulin levels but which are deficient in function. These patients usually show no endogenous virus-neutralizing antibody to vaccinia virus. All cases of progressive vaccinia should have gamma globulin studies. Ten of eleven reported cases in the literature have had a fatal outcome. The recovery of one patient is attributed to the use of hyperimmune gamma globulin. The case reported here raises the figures to 11 deaths in 12 cases.

Postvaccinal encephalitis has already been discussed. The clinical picture is essentially the same as in other postinfectious encaphalitides with onset of symptoms usually occurring at the height of the vaccination reaction.[31] Exact diagnosis cannot be made by spinal fluid examination alone. A diagnosis of postvaccinal encephalitis can be made with cer-



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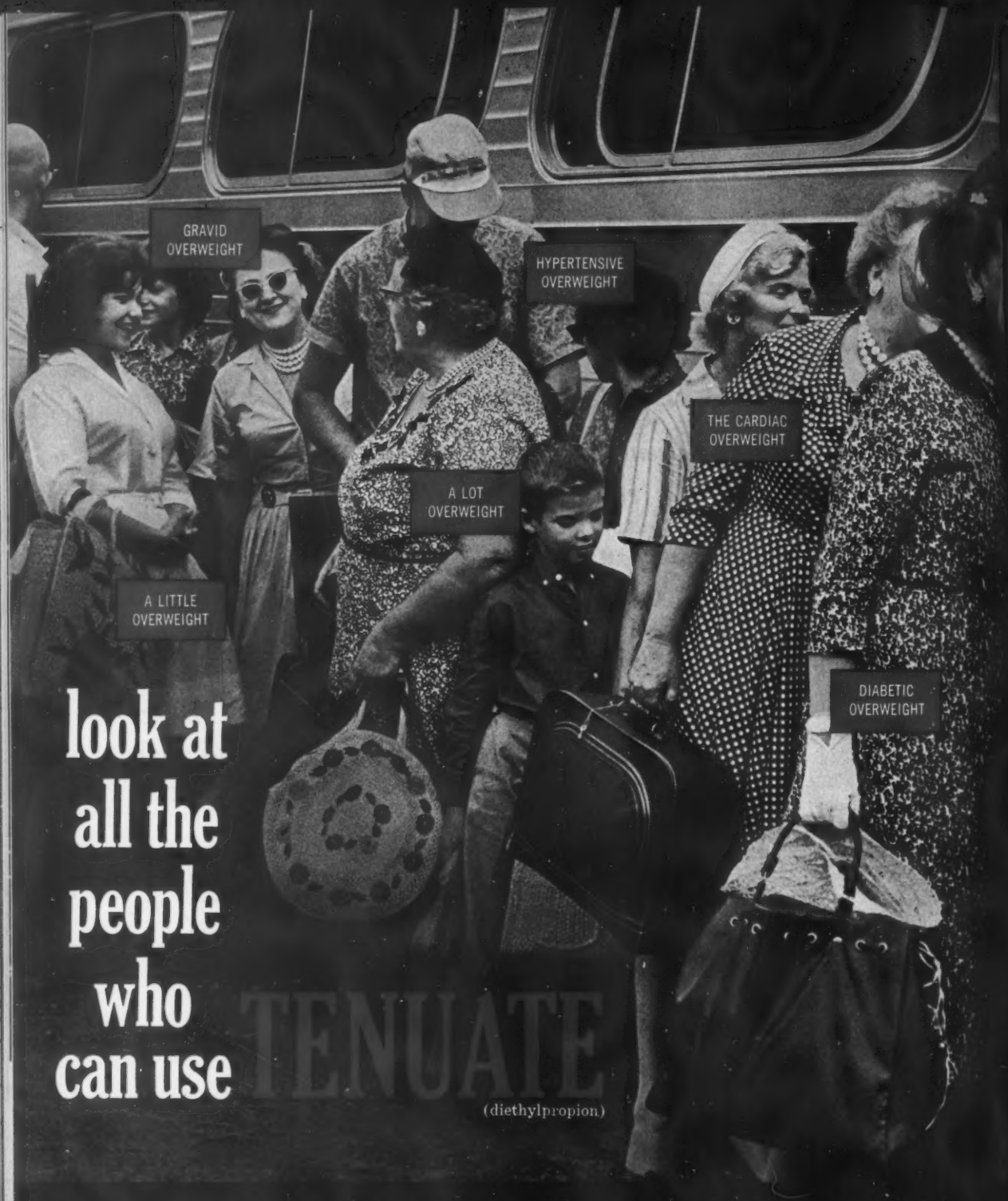

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References: 1. Spielman, A. D.: *Michigan Acad. Gen. Pract. Symposium*, Detroit, 1959. 2. Alfaro, R. D.; Gracanin, V. and Schlueter, E.: *Michigan Acad. Gen. Pract.*, Detroit, Nov., 1959. 3. Huels, G.: *Michigan Acad. Gen. Pract. Symposium*, Detroit, 1959.

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tainty only after microscopic examination of the brain tissue.[1] In the United States it occurs about once in every 100,000 vaccinations.

Various types of rashes may occur after vaccination. These are caused by hypersensitivity to vaccinal proteins and include roseola vaccinosa, erythema multiforme and urticaria. When found they usually occur some nine to twelve days after vaccination. These rashes may be observed about once in every 4,000 or 5,000 vaccinated subjects.

CASE REPORTS

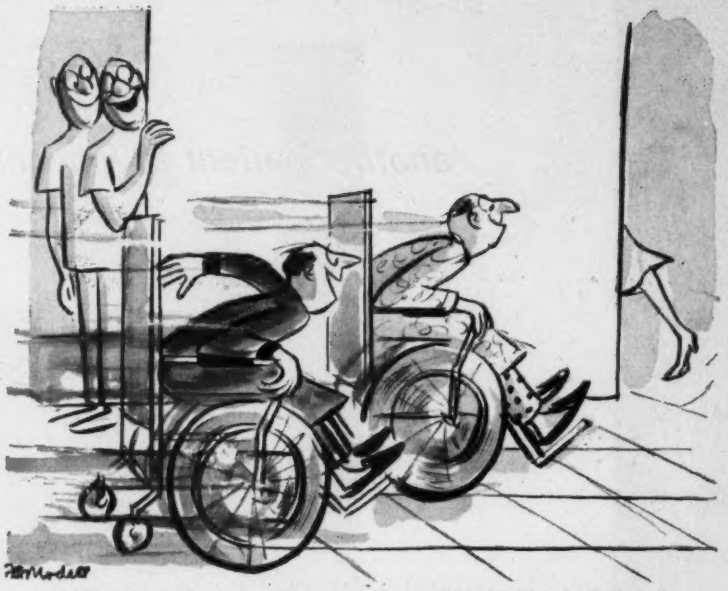
Two recent experiences with serious complications of vaccination have focused attention on this not so innocuous procedure.

The first is the case of a white male, 18 months old, who was referred to St. Peter's Hospital, Albany, on August 11, 1958, for an extensive rash. This had begun three days prior to admission with the development of itchy papules on the posterior aspect of the neck. On the following day, these papules developed into pustules and spread rapidly to cover the entire posterior cervical region, the postauricular region and later the face, hands and forearms, the back of the trunk and the posterior surfaces of the knees. There were no chills or fever; anorexia was marked. The condition became rapidly worse during the next 24 hours and hospitalization was advised.

On admission, it was learned that two siblings, a three-year-old brother and a five-year-old sister, had been vaccinated in a local clinic some three weeks previously. Each child had the maximum reaction on the ninth and tenth day after vaccination. About three weeks later, the patient showed his first signs of disease characterized by local skin lesions and generalized constitutional symptoms. The family history was negative except for eczema, currently in the patient and in two siblings at about three months of age; the remainder of the family and personal history was essentially irrelevant. The child had not been vaccinated previously.

Examination revealed a well developed, desperately ill, extremely toxic infant. The temperature was 104.6°, pulse 128, respirations 24; the main pathology was confined to the dermis. There were hundreds of umbilicated pustular lesions distributed chiefly over the nape of the neck, the postauricular region and the face. To a lesser extent, lesions were observed up into the hairline of the neck, on the cheeks, the eyelids, the chin and the lobes of the ears, and antecubital areas of both elbows, the popliteal areas, and the calves of the legs. The lips and the mucous membranes of the mouth were not involved. The individual lesion consisted of a typical umbilicated vesicle that progressed to pustular formation which then coalesced with adjacent lesions until some areas, especially the posterior surfaces of the neck, consisted of sheets of pustules. The face, especially about the eyes, showed marked edema. There was slight injection of the pharynx but no exudate. The neck was supple. There was no evidence of central nervous system irritation, and the neurological examination was negative. Respiration was normal, but swallowing was accomplished with difficulty. The remainder of the examination was essentially negative.

The temperature on admission was 104.6°. The child was extremely toxic and listless and showed little response to stimuli. The lesions continued to spread for 24-48 hours after admission, but then were gradually brought under control. After four days of hospitalization, signs of toxicity slowly diminished, the edema about the face gradually subsided, and new lesions appeared infrequently. During this period the child received normal gamma globulin (2.5 cc. per lb.); tetracycline; chloramphenicol ophthalmic ointment to the eyes, procaine penicillin and transfusions. Burow's solution for local application was later changed to potassium permanganate solution (1:10,000). Since hyperimmune vaccinia gamma globulin was not immediately available, it was decided to use regular gamma globulin. This was administered on the first, third, eighth and thirteenth days of hospitalization with good results. Our dosage and timing were calculated on the clinical response. The child made a slow but satisfactory recovery. The temperature spiked to 106° for four days and thereafter remained essentially normal. The edema about the face was marked for four or five days and then slowly subsided. The vesico-pustular lesions were



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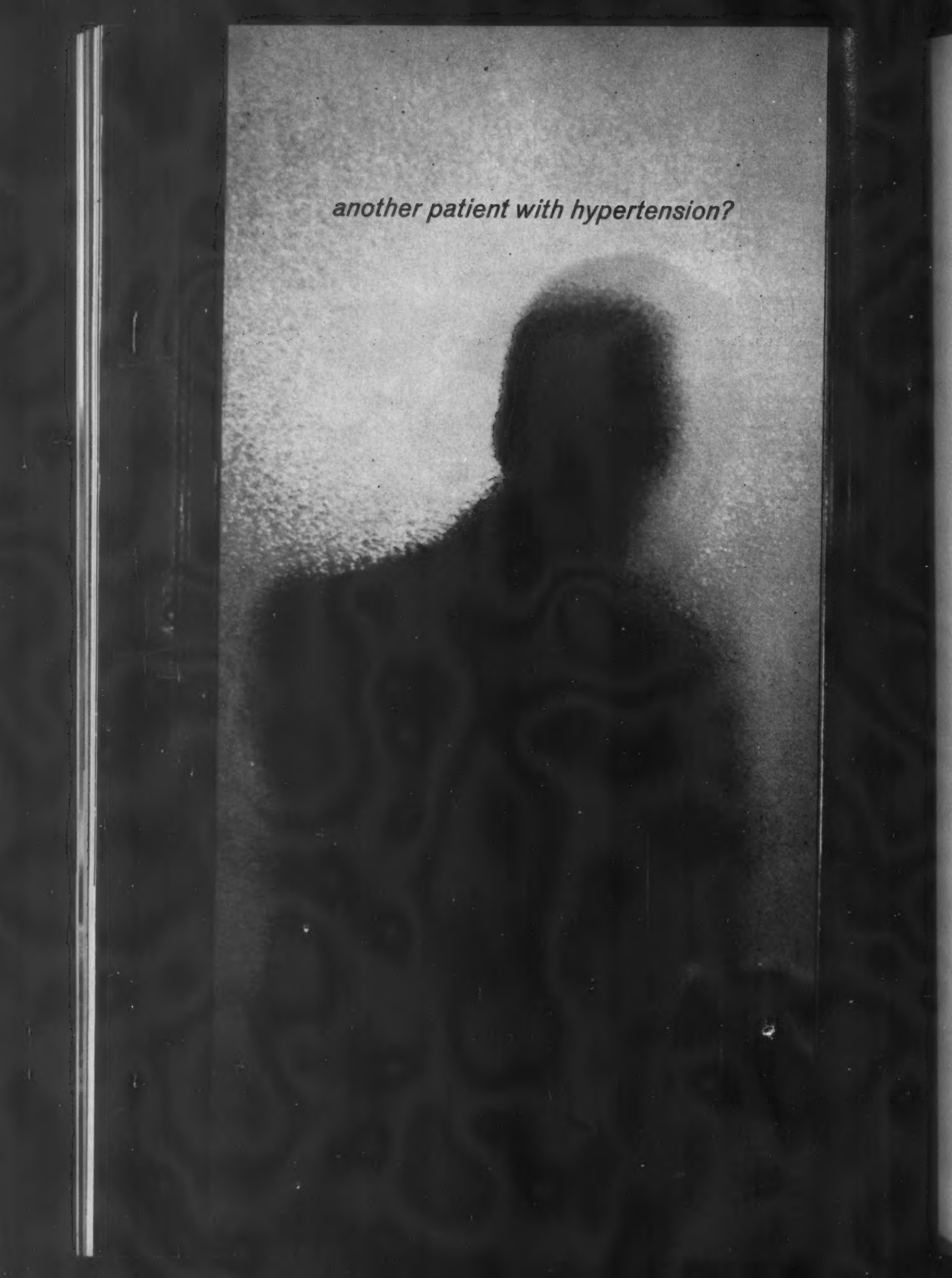
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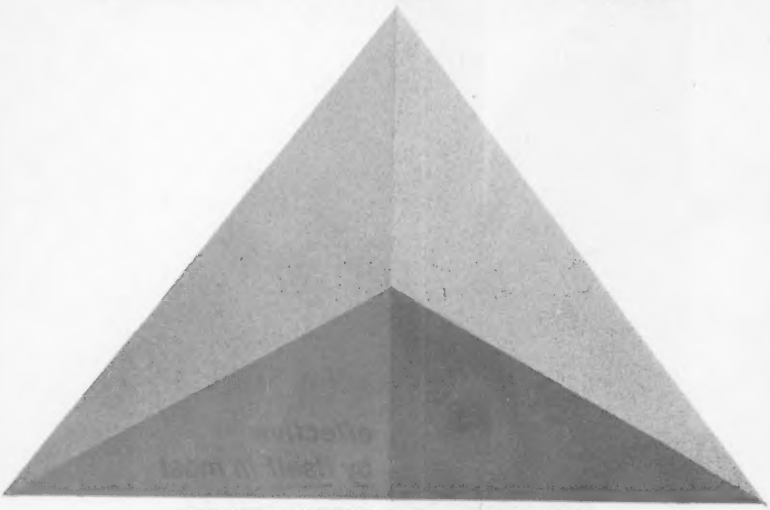

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extensive and disfiguring. They increased from four or five lesions three days before admission to several hundred by three days after admission. At the height of the reaction there were over 400 vaccination marks on the face alone. However, after injections of gamma globulin and a transfusion, few new lesions appeared and the older ones crusted and resolved. Except for an abscess which developed in the left buttock, where an injection of gamma globulin had been given, and which required incision and drainage, the child's course was satisfactory. Culture from the abscess yielded hemolytic micrococcus aureus, coagulase-test positive.

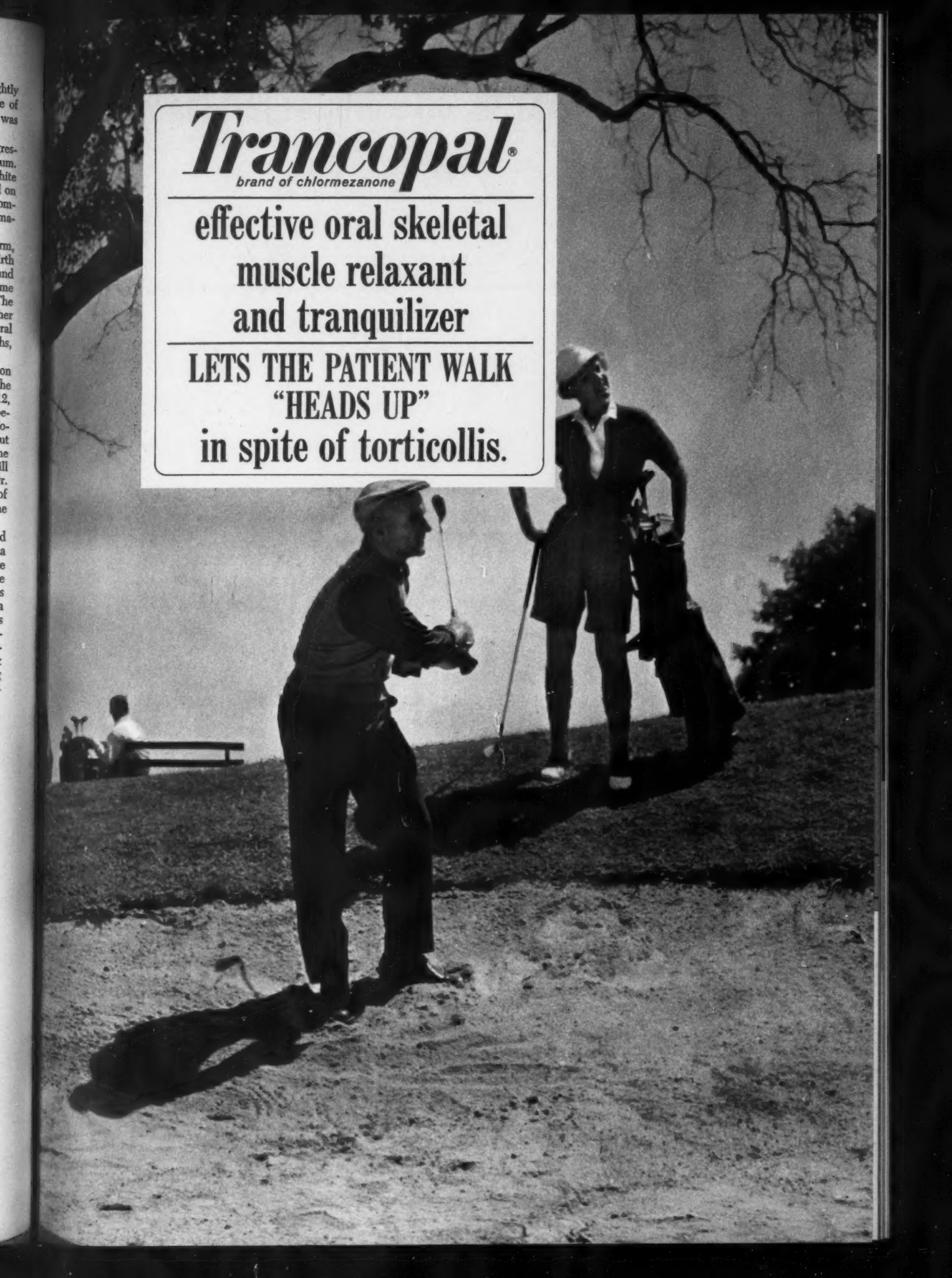
Laboratory findings included RBC 4.7 million, WBC 26,800 per cu. mm.; polymorphonuclears 58 per cent, lymphocytes 42 per cent. Sedimentation rate eight, normal urinalysis. FBS 119 mg.; NPN 39.4 mg.; Na 122.5 mEq/L; K 5.2 mEq/L; chlorides 103.2 mEq/L; total protein 7.0 gm.; albumin 3.6 gm.; globulin 3.4 gm. Culture of a pustule failed to reveal a growth; throat culture yielded a few hemolytic micrococcus aureus. Wasserman test was negative. Electrophoresis showed a slight increase in alpha 2 globulin with a normal amount of gamma globulin. Blood type was Group O, Rh negative. The patient was discharged on September 21, 1958, with the skin lesions practically healed, only small traces of dry, patchy eczema remaining, and in general good health. When last seen, June 3, 1959, the face was remarkably clear; only a few small pitted areas remained over the bridge of the nose. The posterior cervical area was slightly more affected but there was no trace of the other lesions. His general health was excellent.

The second case was one of progressive vaccinia, or vaccinia gangrenosum. This occurred in a 23 months old white male first admitted to Albany Hospital on November 22, 1958, with a chief complaint of oral moniliasis and dysgammaglobulinemia.

The child was the result of a full-term, normal, spontaneous delivery, birth weight 7 pounds, 12 ounces. Growth and development had been normal until time of vaccination at ten months of age. The family history was negative; the father and mother had been vaccinated several times and a brother, age four months, was well but had not been vaccinated.

About three weeks after vaccination on the left arm on November 12, 1957, the arm began to swell. By December 12, 1957, the site of the vaccination had become black and necrotic. Gamma globulin was given repeatedly but without results. The child was then taken to the Chicago Children's Hospital and still later was placed under the care of Dr. C. Henry Kempe, at the University of Denver Medical Center, who treated the child for the next four months.

While there he ran a high fever and was acutely ill. The left arm revealed a very hard, red, swollen mass with a large black necrotic area in the center. The gamma globulin level at this time was 432 mg. per cent and the antivaccinia titer was 1-40. He received large doses of hyperimmune vaccinal gamma globulin. On February 9, 1958, a wide excision of the diseased area of the left arm was done; even the underlying muscles appeared necrotic. Gamma globulin level was now 1265 mg. per cent. Two weeks after the original excision, the patient had a radical forequarter amputation of the left arm and shoulder girdle. Immediately after operation the patient's course was complicated by weight loss and diarrhea. During this time he received large amounts of hyperimmune gamma globulin daily. He was then started on hyperimmune vaccinal gamma globulin obtained from recently vaccinated soldier recruits, 120 cc. being given every other day. On January 27, 1958, the gamma globulin level was 1879 mg. per cent. He also received leucocytes transferred from hyperimmune donors according to the method of Lawrence. A skin test with killed vaccinia was negative and it was obvious that the child had not become sensitized to the antigen. On February 16, 1958, six lymph nodes from a recently vaccinated subject were implanted in the right rectus sheath. The general condition improved until about February 20, 1958, when thrush and diarrhea developed. Laboratory tests showed no trypsin in the stool and no starch granules or fat. Glucose tolerance test showed FBS of 56 mg. per cent; in 30 minutes it rose to 66 mg. and then dropped back to 60 mg. where it remained for two hours. The vitamin A tolerance test showed a fasting level of 213 international units, and four hours after the loading oral dose the level was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1. Ganz, S. E.: *J. Indiana* 52:1134, July, 1959. 2. Kearney, *Current Therap. Res.* 2:127, 1960. 3. Lichtman, A. L.: *Acad. Gen. Pract. J.* 4:28, Oct.,

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LOW BACK SYNDROMES					
Acute low back strain	25	19	8	6	58
Chronic low back strain	11	5	1	1	18
"Porters' syndrome"*	21	5	1	1	28
Pelvic fractures	2	1	—	—	3
NECK SYNDROMES					
Whiplash injuries	12	6	2	1	21
Torticollis, chronic	6	2	3	2	13
OTHER MUSCLE SPASM					
Spasm related to trauma	15	6	1	—	22
Rheumatoid arthritis	—	18	2	1	21
Bursitis	2	6	1	—	9
TENSION STATES	18	2	4	3	27
TOTALS	112 (51%)	70 (32%)	23 (10%)	15 (7%)	220 (100%)

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200 international units rather than the expected level of 1200 to 2000 units per ml.

As mentioned above the first admission to Albany Hospital was on November 22, 1958, with chief complaint of oral moniliasis, dysgammaglobulinemia and malabsorption syndrome. The celiac-like malabsorption syndrome developed shortly after the forequarter amputation operation was performed. Anorexia was marked; the stools were loose, foul and bulky, and averaged 2-3 daily. A celiac regimen, including diet and vitamins, had been used with varying periods of success, but the overall picture was a slowly deteriorating course. In addition, the patient's physical development had regressed. He did not sit erect unaided, and he could no longer stand. Height was 28 inches, weight 15 pounds, 2 ounces. The face was pale and gaunt, the abdomen was protuberant and the buttocks showed marked wasting. The three remaining extremities were spindle-thin. The left ear showed suppurative otitis media. The gums were red and edematous, and there were numerous white patches over the buccal mucous membranes and the soft palate. Laboratory examinations were essentially within normal limits; the gamma globulin was normal with an increase in alpha 2. The WBC was 10,700 on admission and 4,650 two days later; differential count was not significant. The weight curve was very labile, varying as much as one pound overnight. He responded favorably and was discharged somewhat improved on 11/26/58.

He was readmitted on December 20, 1958, for marked inanition (weight was 14 pounds, 12 ounces at two years of age), moniliasis and a severe, debilitating malabsorption syndrome. Because of the monilia infection the mucous membranes of the mouth were so inflamed that oral feedings became most difficult. This monilia infection had persisted on and off for several months. When treated regularly and vigorously with nystatin, the infection remained under control, but if a lapse in therapy occurred, the infection flared up again in all its intensity. The entire interior of the mouth was covered with a whitish membrane from which monilia was cultured. The distribution was so extensive that respiratory and gastrointestinal involvement was suspected. Several small pustules developed on the face, chin and thumbs. A bilateral nonsuppurative otitis media developed. Nutritionally the child looked very poorly; signs of malabsorption syndrome such as extreme wasting, marked loss of subcutaneous fat, protruding abdomen and flattened buttocks became intensified. The weight dropped to 10 pounds, 15 ounces. Temperature elevations were minimal until terminal bronchopneumonia developed.

Laboratory examinations revealed moderate anemia. Several CBC's showed the interesting phenomenon of cyclic neutropenia. The WBC varied from 2250 per cu. mm. on admission to 7,000 to 2,000 to 5,250 at approximately ten- to fourteen-day intervals. The differential counts showed an unusually high percentage of monocytes (16-20 per cent) when periods of neutropenia occurred. Blood cultures and stool cultures for monilia were negative. Studies of immunologic response consisted in (1) Schick test, which was negative after three DPT injections; a DPT booster was given January 30, 1959. Tetanus antitoxin level was determined January 19 and again February 10; the antitoxin level was the same in both samples—0.1 unit per ml. This was a protective level and showed the patient had synthesized a considerable amount of antitoxin. It is difficult to understand why the titer did not rise in the second sample because of the DPT booster following the first determination. Tests for diphtheria antitoxin showed the same levels both before and after the DPT booster, more than 0.05 but less than 0.5 units per ml. The "Schick negative" threshold is considered to be 0.05 units per ml. (2) Antistreptolysin titer: less than 12 Todd units, despite his recent infection; (3) blood studies for polio complement fixation failed to reveal the presence of antibodies despite three injections of Salk polio vaccine. All these tests indicate a failure in immunologic response by the body.

Despite vigorous therapy which included antibiotics, fluids and electrolytes, transfusions and dietary supplements, the gradual decline became inevitable. The child developed bronchopneumonia and expired February 25, 1959, at 25 months of age. Postmortem examination revealed bronchopneumonia and extreme malnutrition.

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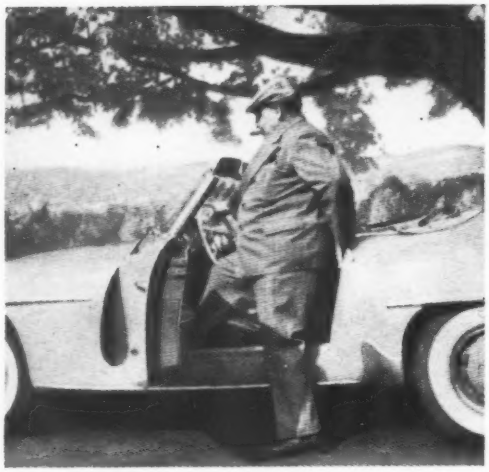

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DISCUSSION

Smallpox today remains a very widespread and dangerous infectious disease. The Eleventh World Health Assembly in June, 1958, stated that there still exist endemic foci in many regions of the world and that the Director General of the World Health Organization should study the possibility of world-wide eradication.[13]

Smallpox is not endemic in any country of the European region of the World Health Organization. Information about some countries of Eastern Europe is deficient, but the Russians claim that they have no smallpox in the U.S.S.R.[13]

In the Americas, smallpox was mildly endemic in the United States before World War II, notably in the Indian population of Montana and New Mexico, but was virtually eradicated here during the war. It was heavily endemic in several South American countries but most of these in the last few years have undertaken mass vaccination. Smallpox has not been prevalent in Central America and the Carribbean Islands. In 1957, there were some endemic foci in Brazil, Colombia and Paraguay. Mexico, Peru, Venezuela reported no smallpox in 1957. Historically, smallpox is said to have spread from Cuba to Mexico in 1518. Millions perished as a result of its ravages. It was equally devastating among the North American Indians of that time.

In southeast Asia, smallpox continues to be highly prevalent. The most important endemic foci are India, East Pakistan, and Burma. These are the most likely sources from which smallpox may spread. The Russians claim that there is now little smallpox in Communist China, and that smallpox was eradicated from Russia in the twenties and thirties. There is some smallpox in Korea, Laos, Cambodia, Vietnam and Thailand. The persistence of smallpox in India and East Pakistan arises from the lack of thoroughness with which vaccination is carried out; that is, apparently many people escape vaccination. However, it is said that even in the apparently well-vaccinated provinces, such as Bombay and Madras, the disease persists. There has been some suspicion that the vaccine may not have been effective or potent.

Since the decline of smallpox in the Americas, Africa is second to Southeast Asia as a smallpox focus. The main endemic foci are in Central and West Africa. There is some smallpox in the Eastern Mediterranean countries but incidence is decreasing in this region of the world.

As stated earlier, there were approximately 120,000 cases of smallpox in the world in 1957; 70 per cent were in Asia. No cases were reported in the United States, and it is doubtful if any cases have occurred since 1953. Incidence seems directly related to the degree of public health activity and efficiency. The great number of cases affecting medical personnel, i.e., doctors, nurses, and hospital employees, is amazing and shocking, especially when one realizes that prevention of this dread disease is at hand.

Ordinarily, vaccination against smallpox presents no obstacles. The complications are usually of a minor nature but when a serious complication occurs, such as those reported in this paper, prompt and efficient action is essential. This includes local care of the lesions in the nature of compresses, antipruritic agents, antibiotic ointments, and systemic therapy such as antibiotics, transfusions and gamma globulin. The great help afforded by gamma globulin cannot be underestimated. The work of Kempe, et al, has been outstanding in this field.[14,15] If hyperimmune vaccinal gamma globulin (0.6 to 0.1 ml. per kilogram of body weight, repeated if necessary) is not immediately available, standard gamma globulin may be used in three times the hyperimmune dose. Kempe obtains hyperimmune antivaccinal gamma globulin four to eight weeks after vaccination of military personnel who show a primary take. Highest antibody titer correlates directly with the size of the vaccination "take." Such gamma globulin contains at least three times the specific antibody content of normal gamma globulin.[20]

Repeated administration of gamma globulin, or increasing each dose, depends on the individual reaction in each particular case. If the celiac-like malabsorption syndrome develops to further complicate the case of progressive vaccinia, special diets are indicated.

The exact mechanism of the deficient immunologic production of antibodies is unexplained. Until recently, many cases of eczema vaccinatum, progressive vac-

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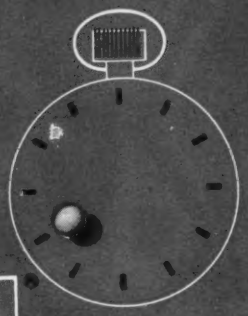

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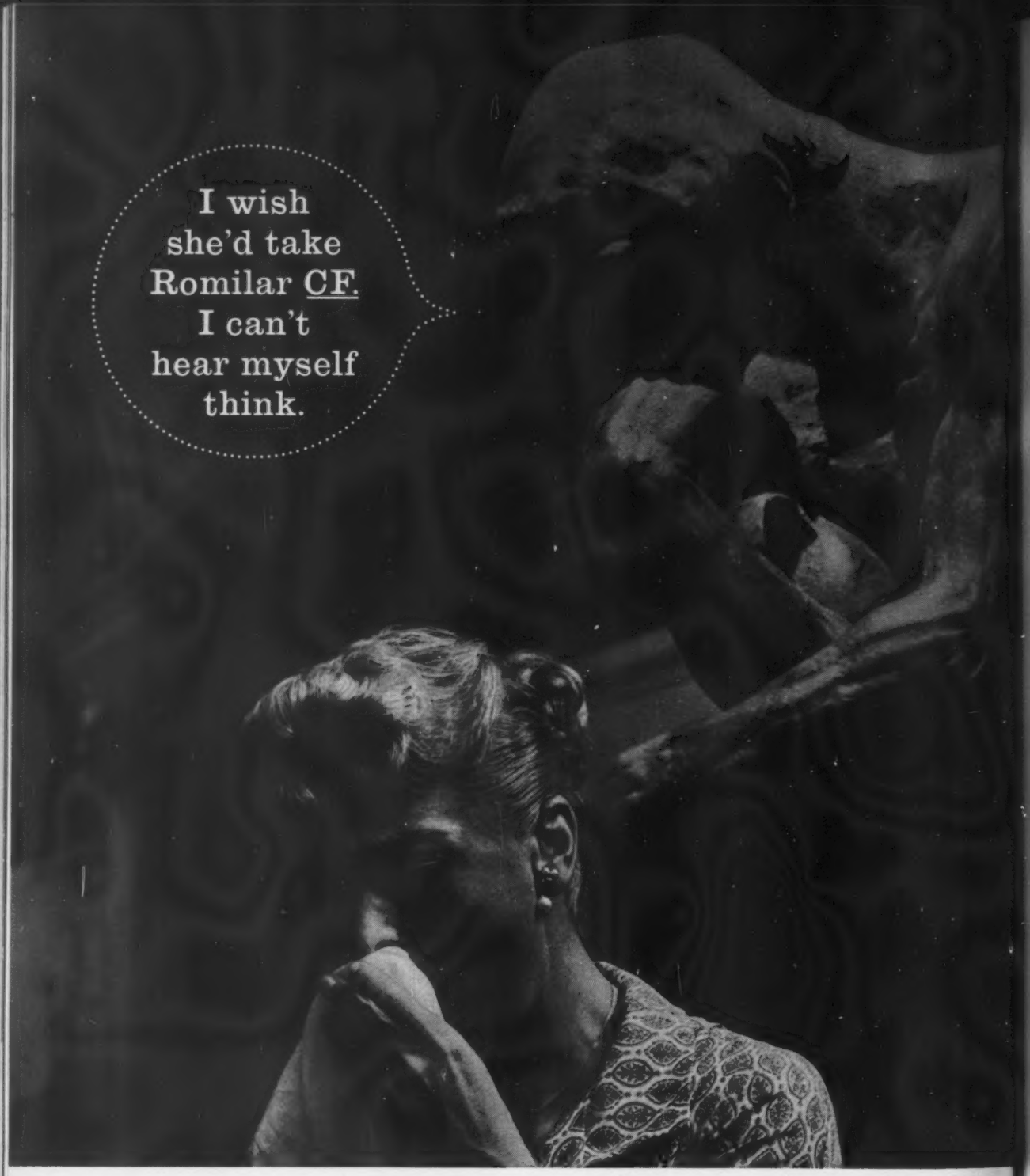

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cinia and generalized vaccinia were reported as having agammaglobulinemia. With improved methods of laboratory technic many such cases are now classified as hypogammaglobulinemia, and a few as having normal gamma globulin levels, but being deficient in function, i.e., dysgammaglobulinemia, in which there are no neutralizing antibodies to vaccinia virus. Why certain patients with proved agammaglobulinemia can be vaccinated without difficulty is not understood at the present time." In these patients, it seems wiser to postpone vaccination for the time being, but if vaccination is urgent, it should be done only after gamma globulin therapy has been instituted.

CONCLUSIONS

An outline of current thinking on smallpox vaccination and its complications is presented.

Two cases representing serious complications of smallpox vaccination are discussed. The first, a case of eczema vaccinatum, a serious disease with a 30-40 per cent mortality during the first two years of life, made a successful recovery after the use of gamma globulin, antibiotics, transfusions and other measures. The second, a case of progressive vaccinia, or vaccinia gangrenosum, one of the most serious complications of vaccination, developed after vaccination. Subsequent complications resulting from dysgammaglobulinemia led to a forequarter amputation of the left upper extremity, and later the development of a severe debilitating celiac-like malabsorption, syndrome, bronchopneumonia and eventual death.

It is strongly urged that all persons who vaccinate against smallpox be aware of the dangers inherent in this procedure, and that no vaccination be performed if the subject has eczema, or other types of dermatitis, or if he be in contact with a case of eczema. If serious complications such as those mentioned in the case presentations develop, prompt and adequate treatment with hyperimmune vaccinal gamma globulin is strongly recommended. If a person has not been vaccinated but has been exposed to smallpox, there are no contraindications to vaccination; it is then an imperative procedure. Hyperimmune gamma globulin may then be given prophylactically with vaccination.

Two suggested classifications of reactions to vaccination are presented. One is the standard accepted classification; the second is a newer, more complete classification based on recent developments in the field of immunology.

The WHO Committee on International Quarantine warns against any relaxation of vaccination measures against smallpox. Strong support of this recommendation is urged.

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Conference on Children and Youth

The Golden anniversary White House Conference on Children and Youth has just been concluded. Planners, speakers, workgroup leaders, participants, all are now engaged in an active appraisal of the Conference. Was it worth the time and effort spent on it? Did it accomplish the goals set forth? No one can answer these questions in full because the real measure of a conference such as this depends, in large part, on what is done with the findings and recommendations.

The momentary stimulation experienced while listening to an inspiring speaker, the desire to rush home to embark on a program discussed in a workgroup can be but fleeting emotions unless adequate help, information, and leadership are available. Realizing this, the President's National Committee for the Golden Anniversary White House Conference from the beginning included Conference followup in its discussions. And on its recommendation, made last October, a National Committee on Children and Youth was established prior to the termination of the Conference's Washington meeting in March. Purpose of the new committee is to follow-up the Conference findings when the President's National Committee dissolves sometime before October 1960.

Composed of 20 members, the new committee has five representatives from each of the organizations involved in the Conference planning: the President's National Committee; the Council of State Committees for Children and Youth; the Council of National Organizations on Children and Youth; and the Interdepartmental Committee on Children and Youth. These 20 members come from both public and voluntary organizations. A steering committee of the new National Committee is now at work defining the committee's functions and reviewing the legal aspects of transferring resources from the President's National Committee to the new committee. To obtain any funds remaining from the White House Conference operations, the new committee must present its plans for approval to the President's National Committee before the latter dissolves.

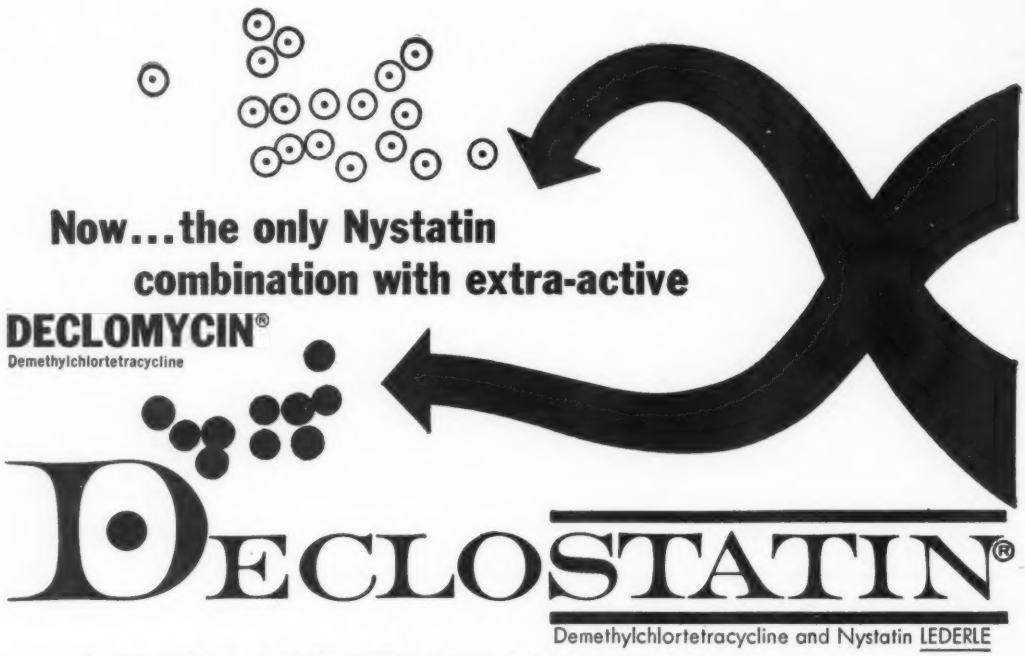
The creation of the new National Committee is a recognition of the long-existing informal coordination among the three councils representing the States, the national organizations, and the Federal Government. This type of coordination is continued in response to a widely shared feeling that a large national organization with a great deal of fanfare is not needed to do a good job in follow-up; that what is needed is an organization which can provide catalytic action for all groups which have an interest in seeing that a better job is done for children and youth.

The activities of the National Committee will probably include, first, development of a clearinghouse for information—information which might be common knowledge in one State or community and yet be entirely unknown in another.

This clearinghouse function would provide a way for a State to become aware not only of what other States are doing, but also of what national organizations and the Federal Government are doing or planning that will affect its children; and the reverse.

The National Committee may also help States, communities, and organiza-

*Reprinted from *Children*, May-June 1960.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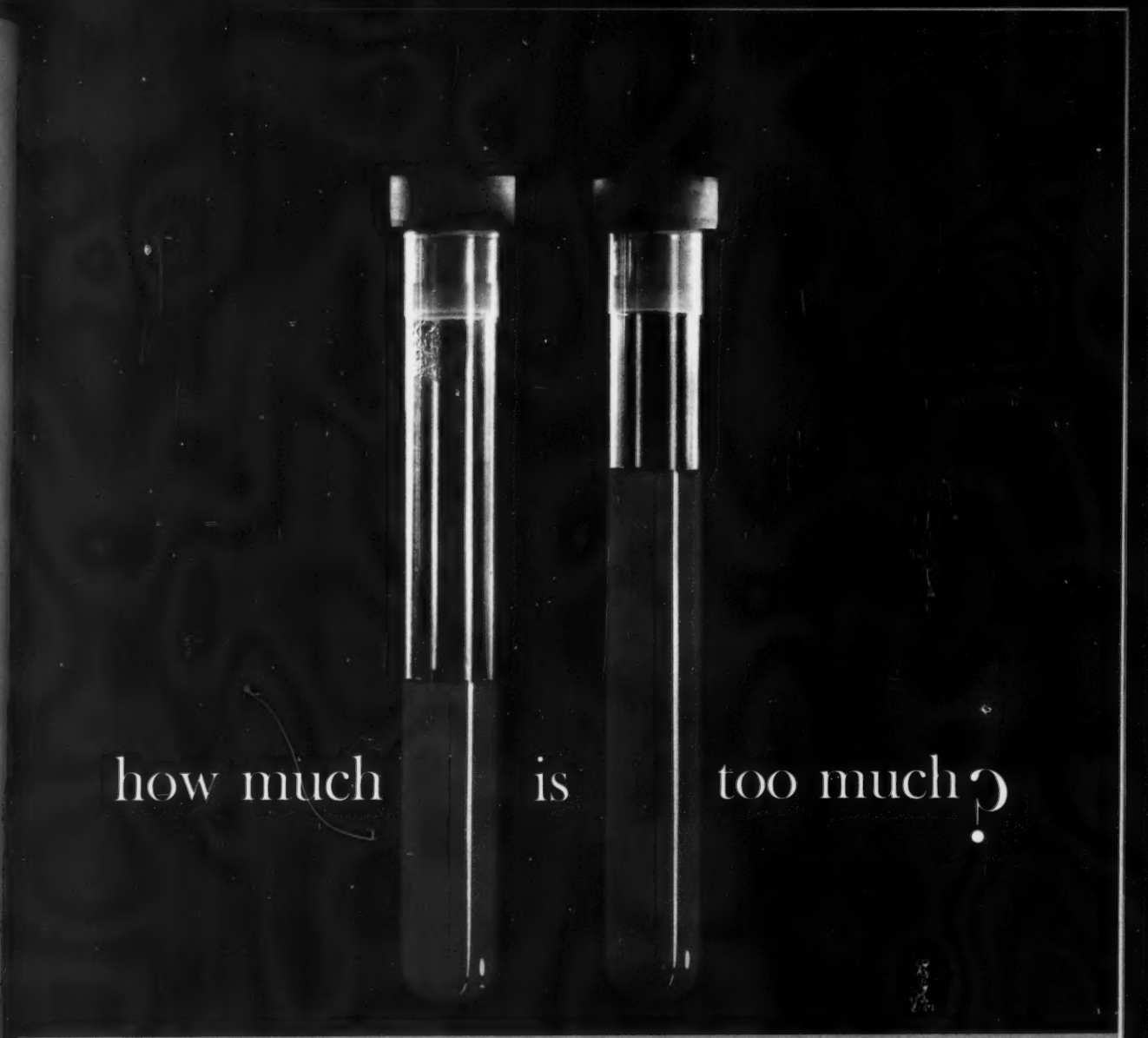

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tions to achieve a consistent quality in reviewing what they are doing or have done. It may help them see how an activity can be reported in a way that will convey the true picture of what is being done or what measure of success is being achieved, so that the experience can be useful to others. Some reports distort facts and gloss over failures in an effort to achieve a glowing picture. On the other hand, some groups do valuable work and produce results but fail to publish and disseminate reports of their work. The exchange of honest reports of followup efforts can be an important step to further achievements.

The new National Committee can, however, be more than a clearinghouse. Through a widespread educational program, it can help the public become acquainted with the findings of the White House Conference so that people will look in their communities for areas which need attention. An educational program which is simple and direct can stimulate interest and feelings of responsibility among the people whose support is necessary for the achievement of goals. It can do this by focusing attention on a specific problem, a particular course of action, a single goal. However, this can only be effective if the goal is described in relation to other problems and approaches with which the community is concerned.

Among other functions for the new National Committee which have been suggested in meetings of the steering committee are: the direct publication of informational material, such as the *Conference Reporter*, now published by the White House Conference staff; finding ways of maintaining consultation services to States on White House Conference followup through stimulating the use of the facilities of Federal and national agencies or providing direct consultation in response to requests; instigating research; and promoting and assisting in carrying out regional and district conferences on children and youth. Which of these suggestions, if any, will be included in the steering committee's report to the full committee is as yet undecided. When completed the report, which will also include suggestions on staffing and structural details, will be reviewed by the Executive Committee of the President's National Committee as well as by the new National Committee before being sent to the President's National Committee for approval.

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STATE ACTION

The primary responsibility for followup of the Conference findings, of course, rests with the States and communities which must view them in the light of their own needs. Many States already have strong, active committees on children and youth, which must now devote themselves both to sustained effort in their current on-going programs and to implementation of White House Conference findings. Some already have plans well underway.

Some of the States already had set dates before the termination of the Washington meeting for little White House Conferences to be held in their State capitals shortly after their White House Conference delegations returned home. Indiana, for example, is holding such a conference this month. The purpose of such meetings is to review the State's report to the Governor in the light of the White House Conference findings, to set priorities for action on a State level, and to stimulate similar reviews and appropriate action within local communities.

In a number of States the structure for followup action on the White House Conference—as well as for continuing review of children's needs and of plans for meeting them—has already been established by the Governor. In some, Missouri for example, a long established commission, council, or committee on children and youth which preceded and worked with the State's committee for the White House Conference has been assigned the followup task. In others, for example Michigan, the State's liaison group for the Conference was a long established, official committee on children and youth for which Conference followup will be a natural function.

In Florida, where the Florida Children's Committee has been in operation since 1947, a little White House Conference created a coordinating group, to carry somewhat the same functions with-

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in the State as the new National committee will nationally. Composed of representatives of public and private agencies and statewide adult and youth organizations, the new group will serve as a clearinghouse for legislative information and for information on programs and needs. It will hold biennial meetings and will require written reports annually of its members. The Florida Children's Committee will serve as the new coordinating group's steering committee.

In Tennessee, followup is to be stimulated by a new State committee composed of the 64 State participants in the Conference at Washington. The committee members, each of whom will also serve on a county committee, will meet once a year beginning this May to discuss priorities for and methods of county action. Its executive committee will be the legislatively established Tennessee Commission on Youth Guidance.

In some States where no statewide committee on children and youth existed prior to the Conference, the Conference has proved to be the stimulation for the formation of a permanent group. This is what is happening in Nebraska.

If the Conference is to produce results which have meaning in the lives of children, such statewide committees will have to continue to survey the needs in their States and to help local communities with self-evaluation and action. The State reports made in preparation for the White House Conference should be regarded as the beginning rather than the conclusion of statewide citizen action in behalf of children. Unless there is already another functioning, widely representative committee on children, the committees appointed for the 1960 Conference should continue their operations, either as official bodies, or, if they are officially dissolved, as voluntary organizations of citizens who are interested in improving the health, education, and welfare of children.

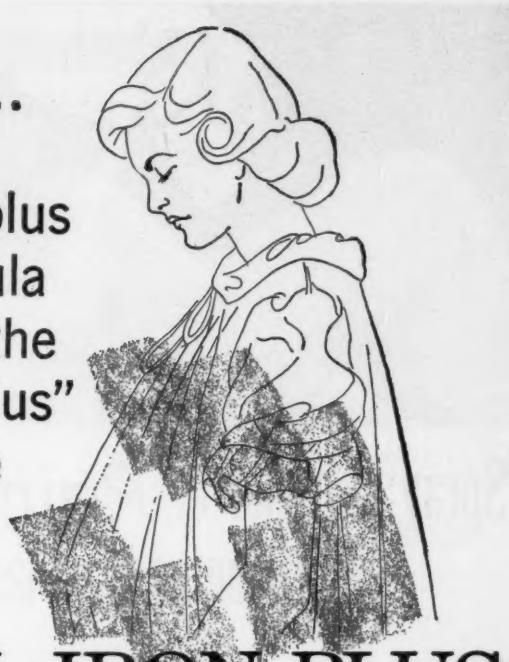
FOR ALL CHILDREN

The youth participants in the Conference, with the usual directness of youth, have made some valuable suggestions and recommendations. We hope they will follow through and disseminate this information to all the youth organizations in the country. We hope too that they will continue to be given opportunity to act in cooperation with adults. These young people are the essential nucleus for future Conferences. What they do may have an important effect on the future of their communities and States and on the future of our Nation.

The fact that over 1,000 recommendations came out of the 1960 White House Conference means either that we are in a bad way, or we are searching more carefully than previously, or that we are restating problems in different ways. Whichever meaning is correct, it poses for the new National Committee a major responsibility for helping to group these recommendations so that they can be put into a usable and workable form and to try to develop a broad design for priorities.

The conversion of words and ideas into suitable action is a difficult problem. Selection of a project and the willingness to move together in a given direction toward an agreed-upon goal demands intelligence and maturity on the part of a community's leaders. The problems themselves, whether related to children suffering from cerebral palsy, mental retardation, polio, or emotional disturbance, or to promoting positive opportunities for all children, have to be viewed critically as part of the community in which they exist. They cannot be taken out of context through national or State decrees. For example, the establishment of a better treatment center for emotionally disturbed children would be useless unless the local community saw the need for it and how it would fit into an overall program for children. Otherwise, a new center might produce more problems than it solved.

The purpose of the Conference—"to promote opportunities for children and youth to realize their full potential for a creative life in freedom and dignity"—can easily become a mere cliché. Or it can remain a sincere statement expressing a real desire to accomplish what it says for all children of all religions, of all races, of all economic levels, from all parts of our country. This is a complex and distant goal. It can be reached through the efforts of people who encourage themselves and others to broaden their horizons in searching for ways of promoting the welfare of children.



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Rabies is an acute, almost invariably fatal, infection of the central nervous system caused by a virus. It is primarily a disease of wild and domesticated animals with man only occasionally infected, usually through the bite of an infected mammal. Among the neurotropic viruses, rabies is characterized uniquely by its high mortality rate and prolonged and variable incubation period. The latter may vary from ten days to six months or longer but is usually from two weeks to three months. The virus may infect any warm-blooded species of animal although certain species are more susceptible than others.

The term "street virus" refers to strains of rabies virus isolated from infected animals in nature. Comparatively speaking, such strains have a long but variable incubation period and can invade and multiply in the salivary glands and produce Negri bodies. "Fixed virus" designates strains of rabies virus so modified by passage in experimental animals that the incubation period is both shortened and constant. Fixed strains lose their ability to form Negri bodies and are usually less virulent when injected by peripheral routes.

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EPIDEMIOLOGY

Wildlife rabies is the principal problem in Canada, Mexico, and in most parts of the United States. The long incubation period and the marked salivary tropic properties of the virus help perpetuate the disease. Rabies exists throughout the year although seasonal variations occur which may vary with the species involved, the climate, and, in domestic animals, with farming practices. In the northeast, for example, canine and fox rabies are more prevalent in the spring whereas bovine rabies is more common in the fall since cattle are customarily stabled during the winter and early spring months.

Dogs are definitely less susceptible than skunks, foxes, and cattle but are more susceptible than cats. Indeed cats are apparently so resistant to peripherally inoculated rabies virus that the disease cannot maintain itself in this species. Young animals are more susceptible than older animals. Vector species may also vary according to geographical location. Thus, the skunk is the principal vector in the upper Mississippi and Missouri River Basins while the fox is most important in the northeastern United States. Excluding bats, there is no evidence that an underlying stratum of infection exists in smaller mammals such as mice, shrews, etc., although this possibility cannot be excluded. Rabies is under-reported in all species of animals but is best reported in domesticated animals, particularly the dog. Wildlife rabies is grossly underreported with the adequacy of reporting directly proportional to the severity and size of the outbreak and to the density of the human population in the area. For this reason, rabies may slumber undetected for long periods of time or may be more prevalent than recognized.

Extensive experience with fox rabies in New York State since 1941 indicates that the disease can maintain itself in certain areas for at least as long as 17 years even though it frequently dies out spontaneously in other areas. The incidence of rabies in cattle, cats and other species of wild and domesticated animals bears a direct relationship to the disease in foxes. Rabies, excluding the bat variety, soon dies out once fox rabies disappears. While a high population of susceptible animals is necessary for an explosive epizootic, a low population level is capable of sustaining an enzootic.[1]

Geographical and climatic barriers such as rivers, lakes, mountain ridges, and deep snows tend to limit the spread of infection from area to area. Other population-limiting factors include hunting and trapping, competition for food and cover, and diseases such as scabies, canine distemper, infectious hepatitis, and leptospirosis. There is considerable evi-

dence, however, that occasionally fox populations may remain high even where such factors are operative. Experience has shown that it is necessary to remove at least 65 per cent of a given fox population before the breeding potential is markedly reduced. Once control efforts are withdrawn or the normal population-limiting factors are no longer operative, foxes have the reproductive ability to reach peak population levels in as little as 12 to 24 months. A decreased fox population in a given area tends to create an ecological vacuum into which foxes migrate from the periphery with lessened competition for den sites and food supply enhancing the survival and reproductive capacity of such animals.

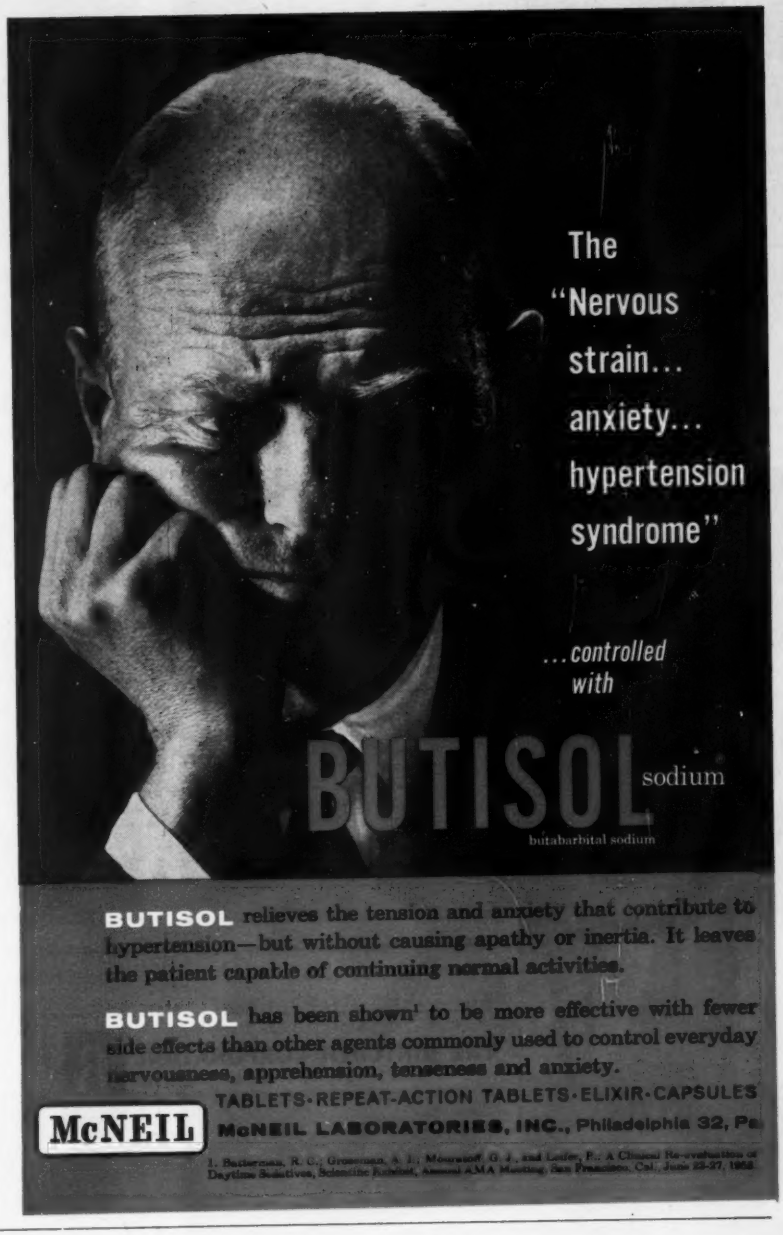
The wildlife picture is further complicated by the fact that rabies in both colonial and free-living insectivorous bats has been recognized in at least 19 states since 1953. It is not known whether the disease existed undetected in bats before 1953 or whether the present situation represents an extension of the disease from Mexico where bat rabies, particularly in vampire bats, has long been recognized. Yet to be answered also is the importance of the bat in initiating or perpetuating rabies in other animals although bat-to-man and bat-to-mouse transmission has now been demonstrated. The fact that certain species of bats are known to migrate long distances lends support to the theory that bat rabies may be spread by extension. Bats may excrete rabies virus for prolonged periods in their saliva without manifest illness.[2]

DIAGNOSIS

A. Submission of Specimens • The suspect animal or its head should be kept cool and promptly delivered to the laboratory together with a pertinent history. If shipping is required, the head should be placed in a tightly sealed watertight container which, in turn, should be packed in cracked ice within a larger watertight container, preferably metal. The shipping container should be clearly labeled and delivered to the laboratory by the quickest and most reliable route. Animals should not be shot through the head or poisoned since those procedures may interfere with diagnostic methods. Freezing of the specimen with dry ice should also be avoided if possible since this may delay diagnosis. Where a rapid diagnosis is not required, sections from Ammon's horn and from the cerebral and cerebellar cortex may be placed in 50 per cent neutral glycerol and mailed to the laboratory.

B. Diagnostic Procedures • The diagnosis of rabies is based on the history of exposure, the clinical signs and symptoms and the course and termination of illness. There are no gross lesions pathognomonic of rabies. The diagnosis is confirmed on necropsy through the observation of viral inclusion bodies known as Negri bodies in the cytoplasm of the nerve cells or by the demonstration of these structures in the brains of animals, preferably mice, injected with saliva or brain tissue. Ultimate proof that the agent isolated in test animals is rabies virus is obtained through neutralization tests in mice. Laboratories without facilities for animal inoculations should not be fully approved for rabies diagnostic work.

The diagnosis of rabies microscopically is less difficult in man than in animals where artifacts or inclusion bodies from other viruses may complicate diagnostic procedures. Negri bodies are usually most abundant in Ammon's horn although it is well also to study material from both the cerebral and the cerebellar cortex. They can be demonstrated in a matter of minutes in impression preparations of brain tissue stained by Seller's method. Negri bodies are stained cherry red whereas the cytoplasm of the nerve cell is stained purplish blue and nuclei and nucleoli deep blue. Atypical Negri bodies have been observed in the brains of many species of animals but are particularly common in albino mice and in dogs, foxes, skunks and cats. Even experienced technicians occasionally have difficulty in differentiating typical Negri bodies from these other inclusion bodies or artifacts. When Negri bodies are not observed in smears, stained sections are prepared from fixed tissues. This may take from one to several days depending upon the method used. Our laboratory[3] prefers Schleifstein's modification of Wilhite's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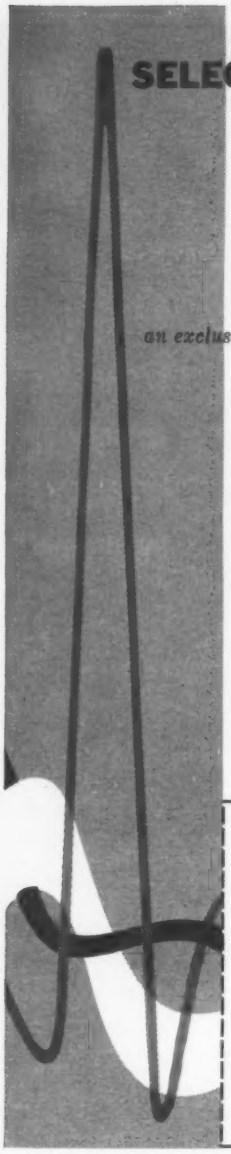
1. Battersman, R. C., Grossman, A. J., Mourant, G. J., and Leifer, F.: A Clinical Re-evaluation of Daytime Sedatives, Scientific Exhibit, Annual A.M.A. Meeting, San Francisco, Cal., June 23-27, 1958.



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stain. Animal inoculation tests are used when diagnosis cannot be made by histological methods or to confirm the diagnosis. In such cases, the diagnosis may be delayed for as long as three to four weeks. The use of the fluorescein antibody technique[4] offers considerable promise as a rapid and specific diagnostic test.

Specimens should not be considered negative until so reported by the laboratory. Competent technicians can establish a histologic diagnosis in approximately 95 per cent of all satisfactory specimens. Unfortunately, approximately nine to ten per cent of the specimens submitted are unsatisfactory for histological examination and require animal inoculations.

C. Management of the Biting Animal • Management practices are predicated on the fact that rabid animals excrete virus in their saliva only while clinically ill or for not more than five days prior to the onset of manifest illness. Thus, biting animals, both vaccinated and nonvaccinated should be placed under quarantine for not less than seven days from the date of the bite. If no change in behavior occurs at the end of the observation period, the biting animal may be presumed to have been noninfective at the time the bite occurred. Since Negri bodies become more numerous as the disease progresses, biting animals should not be killed immediately but should be held until signs of infection are far advanced or until death occurs unless the latter is prolonged. When Negri bodies may be absent or less numerous, diagnosis can be confirmed through animal inoculations. Unvaccinated animals bitten or exposed to a known rabid dog should be quarantined for at least three months or destroyed. Dogs vaccinated within four years with LEP Flury vaccine should be revaccinated and carefully observed but need not be quarantined.

CLINICAL PICTURE IN DOGS

There are no signs pathognomonic of rabies in dogs. Classically, rabies has been arbitrarily divided into the furious and dumb types depending on the signs exhibited by the animal. Such a division, while useful descriptively, is not always clear-cut in practice since dogs with furious rabies frequently exhibit the dumb form as the disease progresses and less frequently animals with a predominantly dumb form of rabies may also exhibit furious signs. Most dogs exhibit signs characteristic of both types at some stage of the illness. A change in behavior is always apparent.

Dogs with furious rabies are most likely to transmit the disease. Customarily, a prodromal period of one to two days is followed by a period of excitement during which dogs may roam aimlessly while wildly snapping at whatever object encountered. Paralysis of the throat and vocal chords is commonly observed, thus leading to drooling and to an abnormal but somewhat characteristic bark or growl. Depression, progressive paralysis and coma usually precede death. Paralysis is frequently first observed at the site of exposure. Death usually occurs within two to five days following onset of illness although it may occur more quickly. In exceptional cases it may be delayed until ten days to two weeks or even longer.

Dogs with dumb rabies are less apt to transmit the disease. Such animals frequently do not show signs of irritability or excitement. Drooling, paralysis of the throat muscles, an abnormal growl or bark, and paralysis of the lower jaw are commonly observed. These signs are quickly followed by generalized paralysis with death occurring one to three or more days later.

TREATMENT

There is no known effective treatment once rabies becomes manifest. Prophylactic measures ("post-exposure treatment") can, however, be taken to prevent rabies when a person is bitten. Such post-exposure treatment consists of local treatment of the wound, vaccine, and/or hyperimmune antirabies serum as indicated. Prophylaxis against tetanus and the use of other agents to control bacterial infection will not be dealt with here since they have no specific effect on rabies virus.

Indications for Treatment • The decision as to whether or how to treat for rabies can best be made by the attending physician. After considering all available information, he must carefully weigh the danger of rabies against the known but frequently over-emphasized hazards of antirabies treatment. Information concerning the prevalence of rabies in the area and in the species, and the vaccina-

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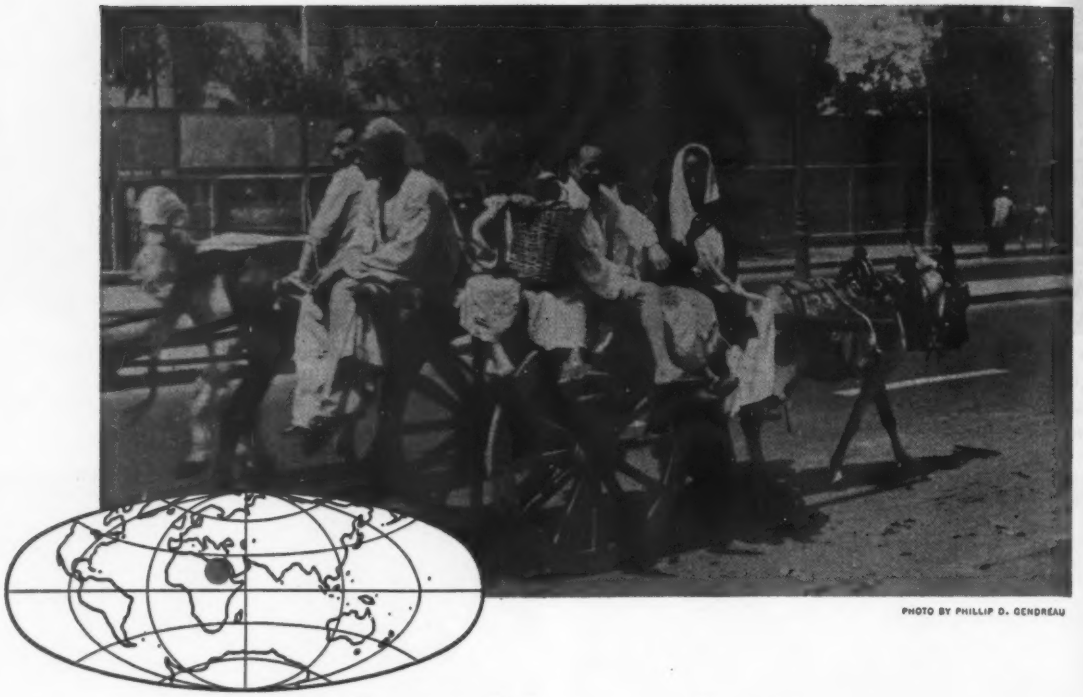

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Musgrave, M. E., and Arm, H. G.: Antibiotic Med. & Clin. Therapy 7:17 (Jan.) 1960.

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tion status and clinical behavior of the biting animal may be helpful. Bites on the head, face, or upper extremities are more hazardous than those on the trunk or lower limbs. Multiple bites present a greater risk than single exposures. Contamination of the mucous membranes or of fresh breaks in the skin with saliva containing virus incurs only a very slight risk of rabies. Contamination of crusted lesions or intact skin is held to involve no risk whatsoever. Also, bites through clothing are less dangerous because clothing tends to filter out saliva. Young children in contact with rabid animals frequently present a problem since it may be difficult to determine if exposure actually occurred. The hazard of ingesting meat and milk from rabid animals is minimal.

Fortunately, every rabid animal does not contain virus in its saliva although from a practical viewpoint, all rabid animals should be considered infectious until proven otherwise. Rabies has rarely been diagnosed in animals such as the rat, mouse, squirrel, and chipmunk. Thus, bites by these animals seldom require specific prophylaxis, but rats which bite without provocation or which show other abnormal behavior should be considered rabid until proved negative.

LOCAL TREATMENT

Prompt, adequate local treatment of all wounds is most important in order to wash out or inactivate the virus. The wound should be encouraged to bleed freely and, if treatment by a physician is delayed, should be thoroughly scrubbed and flushed with soap and water. Since there may be a lag between the introduction of the virus into the wound and establishment of infection, local treatment should be carried out even though delayed. Thorough injection with copious amounts of a 20 per cent soft soap solution or irrigation and swabbing with a one per cent aqueous solution of zephiran chloride are widely recommended and are effective in preventing rabies. The traditional treatment of fuming nitric acid still has its advocates, however, especially for deep puncture wounds where soap or detergent cannot be expected to clean effectively. If the nature of the wound permits adequate application of soap or detergent, there is no evidence that the use of the more drastic fuming nitric acid is more effective or that thorough cleansing with soap or a detergent should be followed by the use of concentrated nitric acid. Immediate suturing of the wounds is not advised since it may contribute to the development of rabies.

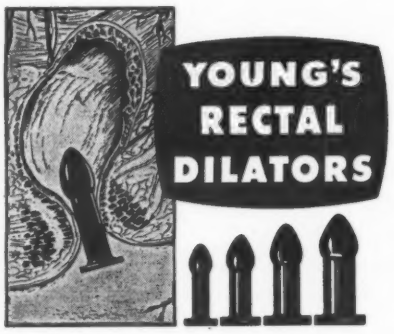
VACCINE

The purpose of vaccine is to induce active immunity before rabies can develop. This is possible in most bites because the vaccine starts to produce immunity soon after injection and the incubation period of rabies is usually long enough to permit effective treatment. Measurable neutralizing antibodies usually reach substantial or peak levels some two to four weeks following the initial injection of vaccine, earlier when the person was previously immunized. Where the incubation period is short, however, vaccine may have little or no effect. Some individuals apparently respond poorly to vaccine.

There are many types of antirabies vaccines. The three most commonly used in the United States contain killed virus. The Semple (phenolized) and ultraviolet types contain nervous tissue whereas the third vaccine, a newcomer, is a killed virus vaccine in which the virus is grown in duck embryos and killed with beta propriolactone. With all three vaccines, the usual course is 14 daily injections administered subcutaneously although 21 daily injections are recommended for severe exposures. These schedules are presently being reappraised. The evidence to date, however, does not justify departure from the traditional course of 14 or 21 doses.

RE-TREATMENT

Killed virus vaccines induce active immunity in man which may persist for many years. This immunity can be recalled by booster injections of killed vaccine or by a booster injection of High Egg Passage Flury modified live virus vaccine.[6] Habel[7] recommends that if persons previously treated are re-exposed to rabies within three months, no prophylaxis is necessary unless it is a very severe



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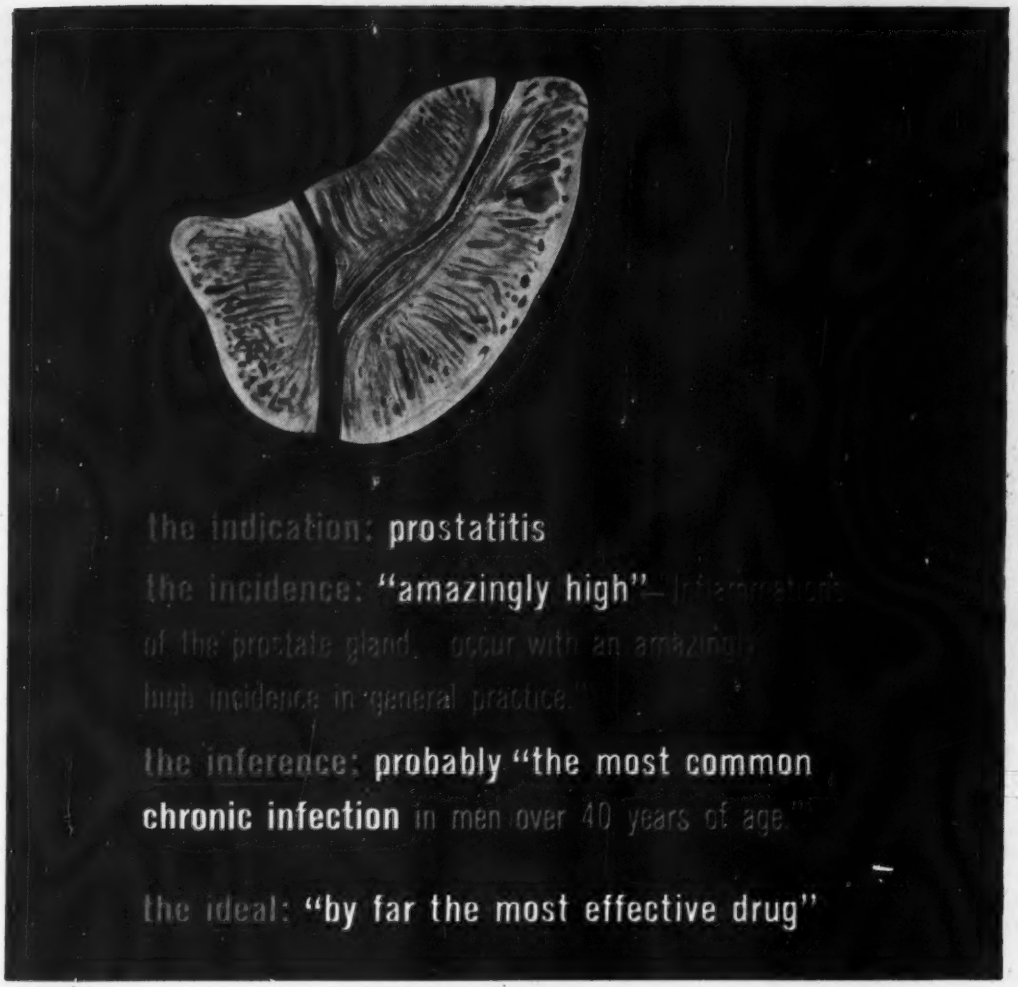
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References: 1. Campbell, M. F.: Principles of Urology, Philadelphia, W. B. Saunders Co., 1957. 2. Farman, F., and McDonald, D. F.: Brit. J. Urol. **31**:176, 1959. 3. Sanjurjo, L. A.: Med. Clin. N. America **43**:1601, 1959.

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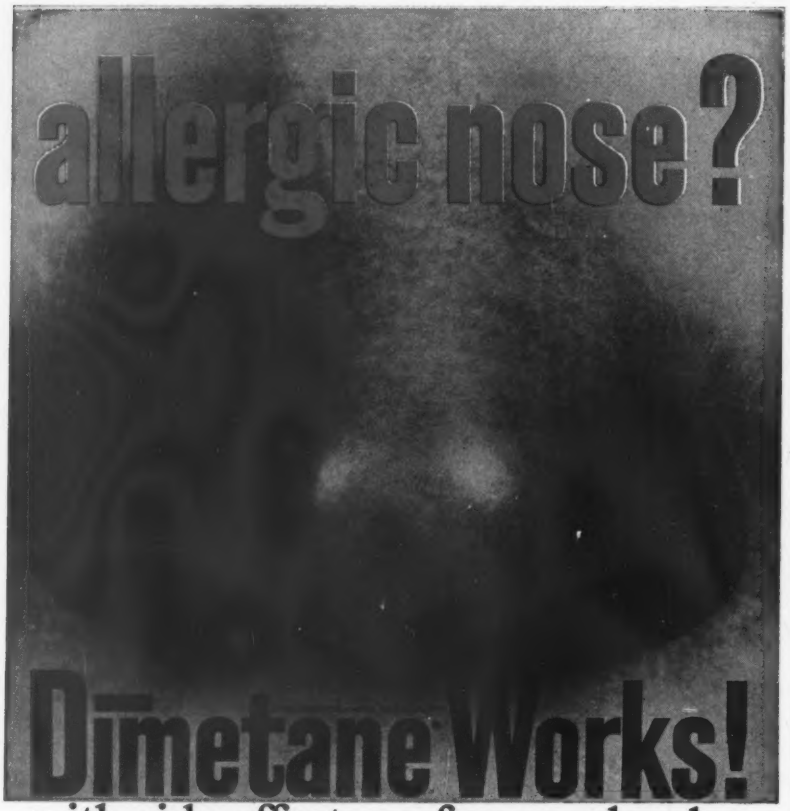

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—New England J. Med. *261*:478, 1959 (Schiller, I. W. and Lowell, F. C.)

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exposure; that two doses of vaccine one week apart will suffice if re-exposure occurs between three and six months while a full schedule of vaccine should be given if the interval is greater than six months.

HYPERIMMUNE ANTIRABIES SERUM

In severe exposures (bites on the face, head, neck, multiple bites, or severe bites elsewhere) rabies may develop before the vaccines produce active immunity. In such exposures, hyperimmune antirabies serum may give passive protection until active immunity is developed. Serum is given in a single dose of 0.5 ml. per kg. and should be immediately followed by 14-21 injections of vaccine as indicated. Serum is always given intramuscularly although multiple sites may be used because of the large volume. A portion of the serum, preferably not less than 5.0 ml., may be infiltrated around the wound. To be most effective, serum should be given as soon as possible following exposure although it is perhaps never too late to use it. Only a single dose of serum should be given since additional doses may interfere with the production of active immunity by vaccine.

Since serum is obtained from actively immunized horses, we are concerned with the dangers of sensitization to horse serum as manifested by an acute anaphylactic type of reaction or serum sickness. As many as 15 to 25 per cent of the persons treated develop serum sensitivity so serum should be reserved for more serious exposures. A careful history of allergy and of previous administration of serum should be taken and the manufacturer's directions for sensitivity testing carefully followed. A negative skin test or eye test, while extremely useful, does not absolutely guarantee the absence of sensitivity.

Antihistamines are frequently prescribed in conjunction with the use of serum. ACTH and cortisone should be considered in treating serum sickness.

VACCINE COMPLICATIONS

Local reactions from antirabies vaccine include pain, redness, swelling and induration at the site of injection. Such reactions are generally transient and inconsequential.

An important complication of nervous tissue vaccines, such as the Semple and ultraviolet irradiated types, is encephalomyelitis caused by sensitization to the nervous tissue component of the vaccine. The reported frequency of such reactions may vary from one in four hundred to one in many thousands. In the New York City experience[5] one out of every 2,025 persons treated developed encephalomyelitis or neuritis. The rate was five times higher in those who received 14 injections than in those who received seven or less. Onset of complications ranged usually between the 8th and 21st day after the first dose. Although none of the 46 cases in this series died or had severe permanent sequelae, fatalities can occur. The effectiveness of ACTH and cortisone in the treatment of such reactions has not been adequately evaluated. Headache accompanied by fever, nausea, general lymphadenopathy and malaise are indications to stop nervous tissue vaccine. Because of the hazards of nervous tissue vaccine, the duck embryo vaccine is welcome. It contains little or no nervous tissue and should involve less risk of allergic encephalomyelitis. Presumably, it should be efficacious like the other killed vaccines when used after an initial dose of antirabies serum but there is no published evidence of this to our knowledge.

OCCUPATIONALLY EXPOSED PERSONS

Preliminary data suggest that occupationally exposed persons such as veterinarians, livestock owners, and trappers, may be protected prior to exposure by repeated injections of killed virus vaccines of nervous tissue or duck embryo origin, or by the HEP Flury type of modified live virus vaccine produced in embryonated chicken eggs. Since challenge experiments are not possible in man, possible protection must be measured by determining the level of circulating antibodies. Sufficient data are not available so that a vaccine schedule may be depended on without studying antibody levels in the vaccinated persons. Thus prophylactic immunization, while useful, must still be regarded as experimental.

CONTROL MEASURES

Rabies will continue to be a problem in man and the domesticated animals as long as the disease exists in wild animals.

A. Control in Dogs • Any community can control or eradicate dog rabies if it so desires either through stringent dog control measures or the mass vaccination of

dogs. Canine rabies can best be controlled, however, by using both methods. Dog control measures include the registration and licensing of all dogs, the elimination of ownerless and stray animals, the quarantine of nonvaccinated dogs and the destruction or confinement of all animals bitten or exposed to known rabid animals. Adequate legal and administrative authority is essential.

Where wildlife rabies does not exist, the control of canine rabies is comparatively simple. Experience in New York State, however, has shown that canine rabies can be controlled through the vaccination of dogs even when wildlife rabies is widely prevalent. To be most effective, at least 70 per cent of the canine population should be vaccinated. Two effective antirabies vaccines[9,10] are available—phenolized nervous tissue vaccine containing killed virus and the HEP Flury strain of modified live virus produced in embryonated chicken eggs. Although the subcutaneous injection of nervous tissue vaccine affords measurable protection for as long as two years, the HEP Flury type of modified live virus vaccine is the vaccine of choice. It is safe, inexpensive and induces more profound and longer-lasting immunity. Only nine of the more than 350,000 dogs vaccinated with live virus vaccine in official programs in New York State from 1950-1958 inclusive subsequently developed rabies as compared to 173 cases among the smaller nonvaccinated population. There was one death caused by the vaccine. We believe that a single intramuscular injection of this vaccine will protect dogs for at least four years and probably for life. This vaccine should not be used in dogs less than three months of age, in cats less than six months old, in cattle, foxes, raccoons, and skunks or in any other species of animals without adequate prior evaluation.

B. Wildlife Rabies • Vector populations need not be eliminated but must be so reduced that the chain of transmission is broken. Most wild animals, particularly small mammals such as rodents and skunks, spend their entire life span within an extremely limited area. Foxes also seldom travel beyond a maximum five-mile radius in the northeastern part of the United States. They may range more widely, however, during the breeding season or when the young of the year seek new homes during the late summer and early fall months. During this period, foxes have been known to travel as far as 50 miles although such distances are believed rare.[11]

Effective control measures include trapping, den gassing with cyanide gas, and poisoning. Experience in New York State has shown that trapping and den gassing can control rabies. To be most effective, however, wildlife control measures must frequently be carried out over a broad area and for fairly long periods of time. The use of poisons such as strychnine or cyanide incorporated in an attractive vehicle is cheaper and more effective than trapping although the lack of species-specific baits is a limitation. Best used in sparsely settled areas, carefully conducted poisoning campaigns can be successfully carried out in more densely populated areas as well. The payment of bounties is of little value in controlling rabies.

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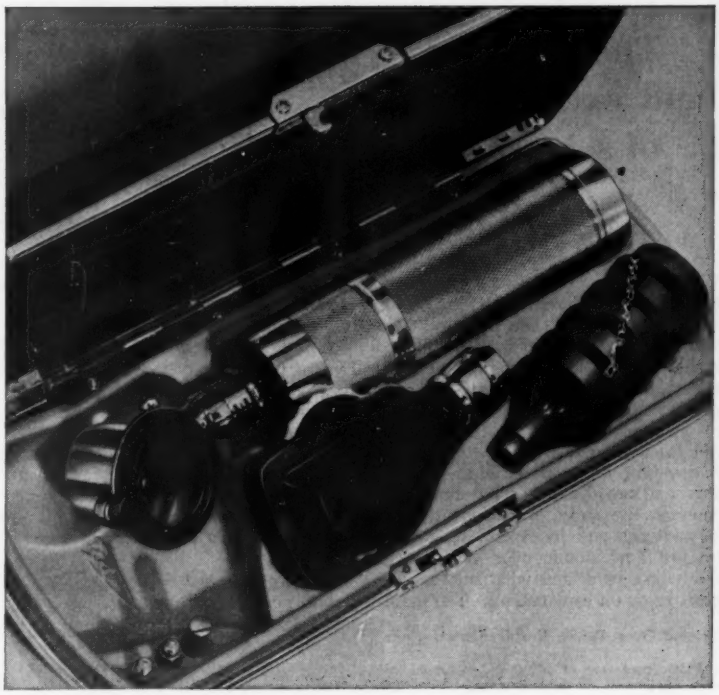

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The sweep and excitement of science*

John R. Platt, Ph.D.†

The tremendous interest of the public in science today, I think, can be attributed to two main factors. One is the headline role that technology is now playing in war and in public affairs. It inspires readers to learn more, uniting their curiosity with good citizenship. But much of our fascination is also due to the skill and devotion of teachers and writers, editors, and broadcasters, who are trying to present the story of science to the mass audience and to explain in simple terms just how atomic piles, computers, and satellites work and what they mean. Interest feeds on explanations. The more we get, the more we want, from 4 years of age onward.

Science no longer needs to be explained just to laymen and citizens and children; it now needs to be explained to statesmen and philosophers and even to scientists themselves! The poor scientist can never keep up with the hundred thousand research papers that are published every year, and so he becomes a layman too, in every field but his own, and an important part of the mass audience. There will have to be writing up as well as writing down. There is a need and an audience at every level of sophistication from the nursery school to the graduate school.

What shall we give these audiences? Everyone has his own recipe, but I am sure we are all agreed today that quiz-show facts are not enough. I once heard an English chemist criticize another English chemist by saying, "That man knows more facts that are almost right than anyone else in the world." Perhaps the American public knows more facts that are almost right than any other public in the world.

But even if the facts are right, the public needs something larger if it is to understand what science is all about. There are three particular qualities of basic science—not technology but basic science—that I think a citizen in a scientific society should be shown over and over until he begins to feel them for himself. The first quality is the excitement of science, the second is the sweep of science, and the third is the incompleteness of science.

EXCITEMENT

To say that basic science is exciting may sound like a contradiction. We are used to the really spectacular excitements of the engineers with their radar and rockets; and the life-and-death excitements of the doctors, the biological engineers, in their white coats. By contrast, the intellectual excitement of a man sitting over a microscope in a university basement tracking down a clue may seem pretty tame. But I would remind you that there are two intellectual excitements that are not tame at all and that we remember all our lives. One is the thrill of following out a chain of reasoning for yourself; the other is the pleasure of watching several strongly individualistic personalities argue about their deepest convictions. That is to say, the thrill of a detective story and the pleasure of watching a play by George Bernard Shaw. I would claim these are exactly the excitements basic science has to offer.

Moreover these intellectual thrills in science are not something distant or alien, but something closely continuous with our everyday thinking. It is true that science is complex. This is because so many men have been building it up for so long. Nevertheless every individual step in it is a little inference as simple as looking out at the weather

*Reprinted from *Public Health Reports*, June 1960.

†Dr. Platt, professor of physics, University of Chicago, delivered the address from which this article was taken before the Thomas Alva Edison Foundation meeting on "The Mass Media and the Image of Science" in Washington, D.C., November 6, 1959.

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FACT 1. Prostatectomy can often be avoided by expectant medical treatment.[1]

FACT 2. More than 50% of men over 45 develop benign prostatic hypertrophy.[2]

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FACT 4. Prostall capsules effectively relieve prostatic symptoms as follows: nocturia 95%, urgency 81%, frequency 73%, discomfort 71% and starting delay 70%.[4]

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1. Chapman, T.L., Expectant treatment of benign prostatic enlargement, **Lancet** 2:684, 1949.
2. Hinman, F., The obstructive prostate, **J.A.M.A.** 135:136, 1947.
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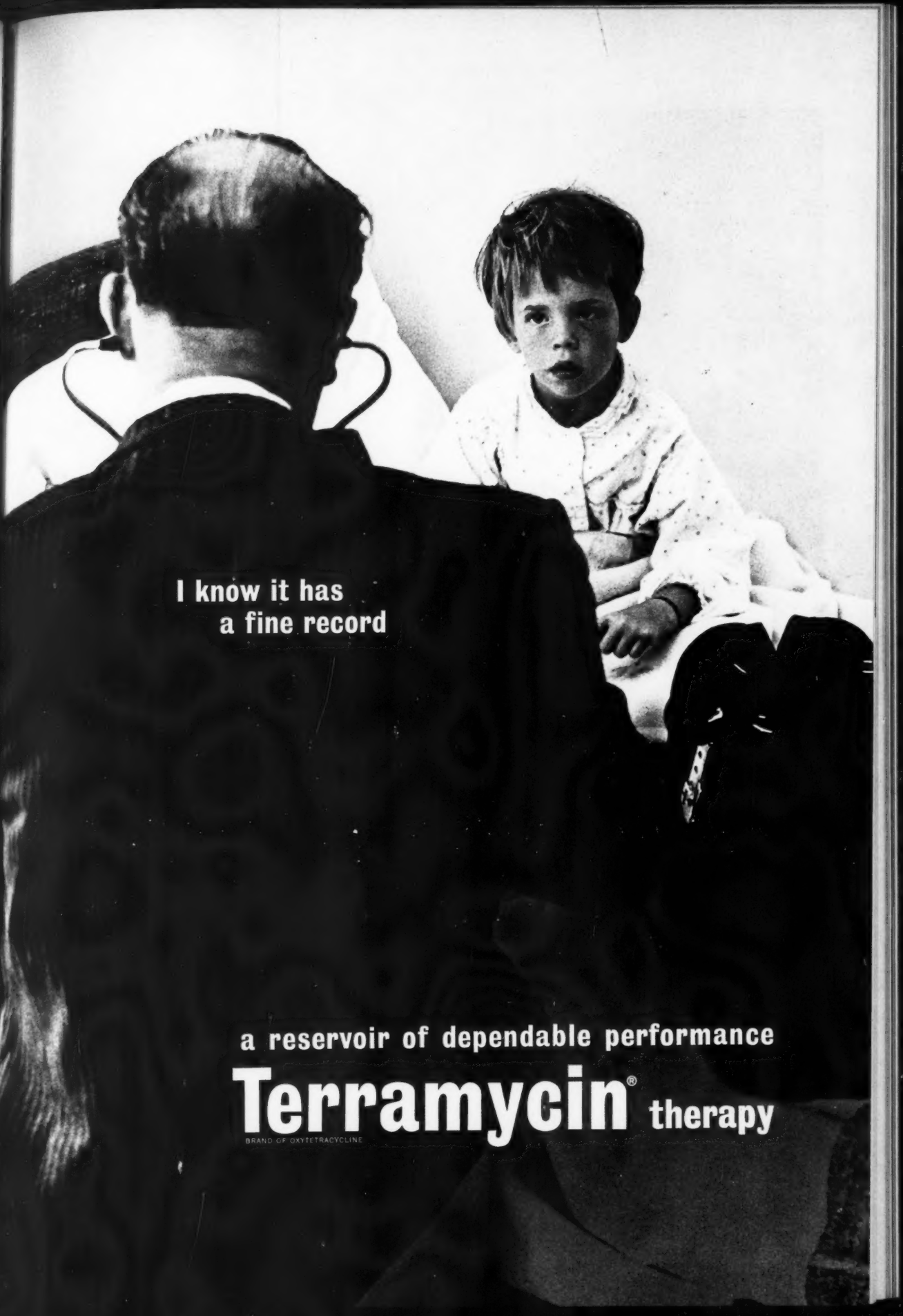
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IN BRIEF

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ADMINISTRATION AND DOSAGE: For infants and children, 10 to 20 mg. of Terramycin per pound of body weight daily, in divided doses, is usually effective.

wt. lbs.	daily dosage (10 mg./lb.)	practical daily dosage	
		Oral Suspension 125 mg./tsp.	Pediatric Drops 5 mg./drop
10	100 mg.	—	5 gtt. q.i.d.
20	200 mg.	½ tsp. q.i.d.	10 gtt. q.i.d.
30	300 mg.	½ tsp. t.i.d. and 1 tsp. h.s.	15 gtt. q.i.d.
40-50	400-500 mg.	1 tsp. q.i.d.	—
60	600 mg.	1 tsp. t.i.d. and 2 tsp. h.s.	—

PRECAUTIONS: Although adverse reactions to Terramycin are rare, if glossitis, allergic reaction, individual idiosyncrasy or other untoward effect should occur, discontinue medication. Broad-spectrum antibiotics may occasionally cause an overgrowth of nonsusceptible organisms such as monilia and resistant staphylococci. Should such superinfection occur, replace medication with therapy indicated by susceptibility testing.

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and deciding whether or not to take a raincoat. When we look at a celebrated rocket engineer like Werner von Braun, we see a man running a big complex organization and dealing with incredible horsepower. But when we look at a fundamental scientist like James Van Allen, the university professor whose tiny satellite equipment detected the radiation belts around the earth, fundamentally what we see is a man stepping to the door of his planet to see how the temperature is outside.

What is essential in any science story is the little chain of everyday inference, the reasoning. It may surprise many people to know that the chain of new scientific reasoning in a whole research study is frequently less complex than an everyday business decision or a crossword puzzle or a game of chess. It would have a salutary effect on our attitudes if for 24 hours we could cross out the words "science" and "scientist" wherever they appear, and put in their place the words "man reasoning." Even in the mathematical sciences, like physics, it is the reasoning that comes first, the equations second; and the equations will not save the theory if the reasoning is wrong. It cannot be said too often that science is not mathematics, but reasoning; not equipment, but inquiry.

The master at demonstrating reasoning to a mass audience was Conan Doyle. It would not be far wrong to think of every science story as his kind of detective story, with its puzzles and its suspense, its false leads and frayed tempers, and its brilliant Sherlock Holmeses, its half-brilliant Inspector Lestrades, and its admiring Doctor Watsons. It is interesting to remember that Galileo himself used a very similar group of characters to explain his reasoning to a mass audience. Science is the greatest of all detective stories, a continued yarn that holds its audience for life, with the disagreements of the characters nowadays just as conspicuous and as amusing as ever.

The second excitement in the science story is the excitement of personalities. Biography and belles-lettres have hardly touched the field of science. There is valuable literary work to be done here. We need a good biography of G. N. Lewis, whose department at Berkeley turned out half of the best physical chemists in America. We need one of William Moffitt, the witty and brilliant theoretical chemist at Harvard, whose death last year at 33 was a loss far greater than the loss of any headlined baseball player or movie star. We need to put our senior teachers, James Franck of Chicago and Joel Hildebrand of California, and Percy Bridgman of Harvard, on Caedmon records, like poets, for posterity. There are many stories to be found in the sequences of brilliant teachers and brilliant pupils; my own department is fond of pointing out that three Nobel Prize winners this year and last got their Ph.D.'s with Fermi at the University of Chicago.

There is more unusual material, too, such as the story of the Hungarian-American scientists so brilliant that the others call them the "men from Mars." Or the story of such a man as Leo Szilard, a strange and contradictory thinker, who has surely influenced history by his unique role in starting the atomic bomb project as well as by his pioneer landmark papers in a dozen fields. The lighter material would include the amusing yarns that all scientists know about the hobbies of their favorite personalities. There are the mountain climbers; and Luiz Alvarez' parlor tricks; Richard Feynman's lockpicking; Arthur Roberts' musical compositions; and the insults, and the jokes—like the story of the Hungarian who had a sign over his desk that said "Being Hungarian is not enough."

And there are not only past stories, but future stories in the making, the men who may get the Nobel Prizes next year, and the year after.

When the stories of these personalities in science begin to be told, I suspect that we will find that all the men have one common characteristic: they are having fun. And the fun will be contagious. It has been said that the only people who get paid for doing exactly what they like are physicists and baseball players. When the word leaks out to the children, there will not be laboratories enough to hold the budding scientists.

SWEEP

The second quality to get across to the mass audience is the scope or sweep of science. By this I mean the great range of problems covered, the range of the methods of work, and the wide range of the implications. For illustration I have selected three areas which show very different patterns of development

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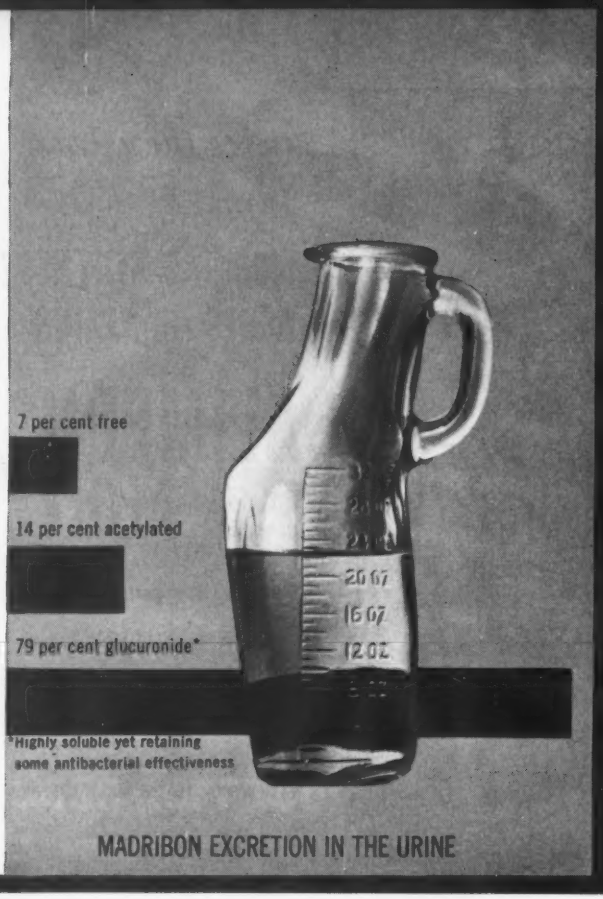
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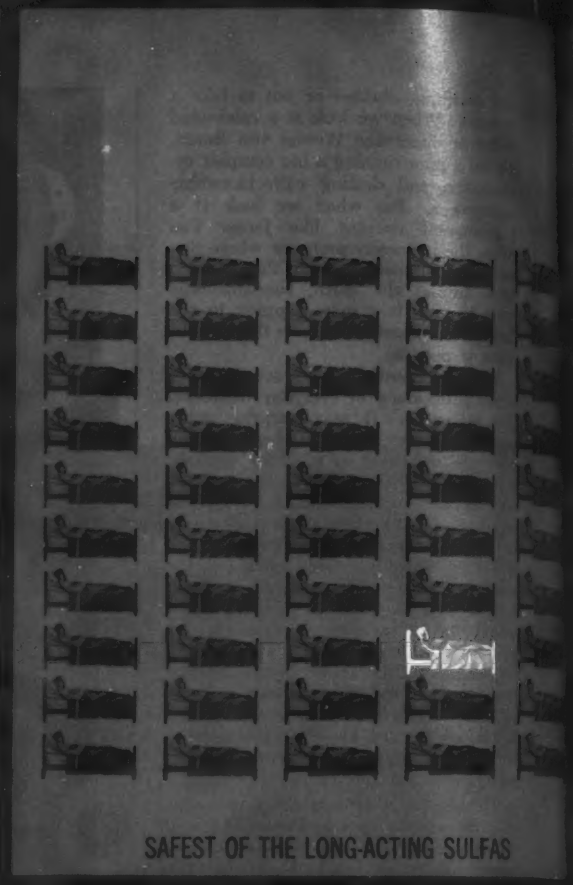

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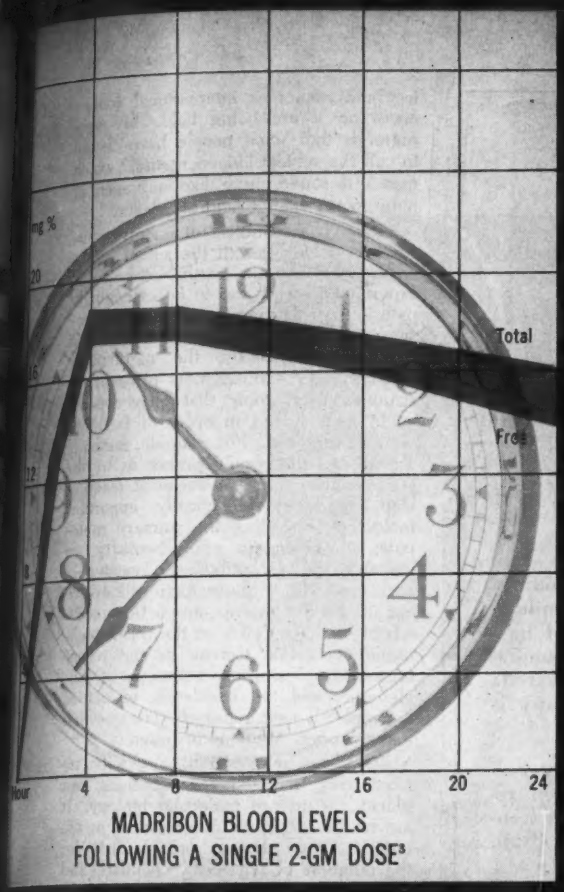

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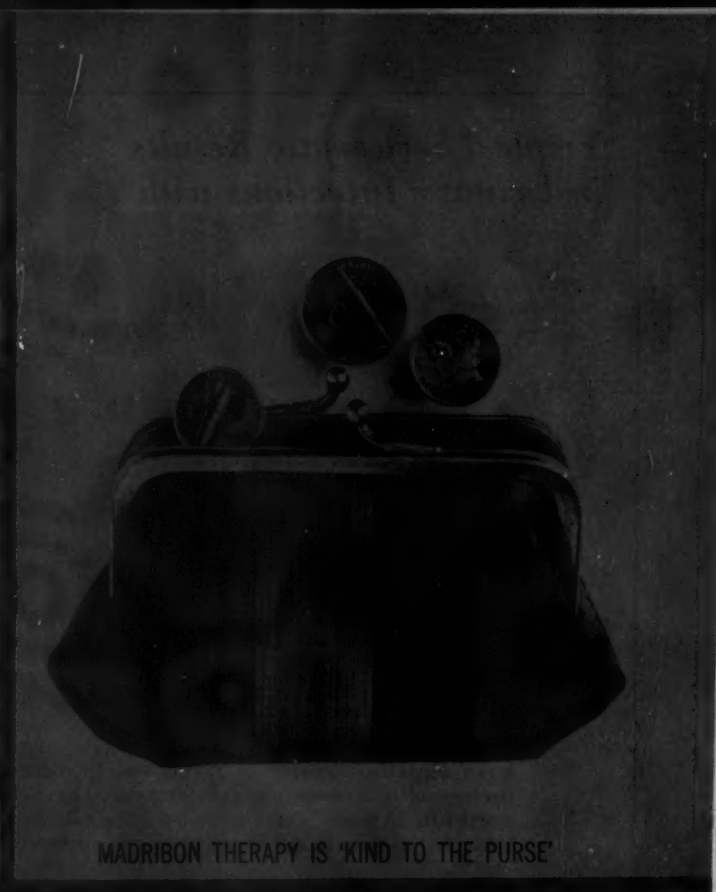

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today. One of these is biophysics, the second is what is called molecular biology, and the third is some of the recent work on evolution.

Biophysics is one of the border areas of physics. It is one of the active fronts that have radiated out from the atomic physics of 30 years ago. In one direction these fronts include the new and rich and spectacular sciences of space physics, nuclear physics, and solid state physics. In the other direction, the activity runs instead along several of the borderlines with the older disciplines, giving us the somewhat quieter fields of chemical physics, biophysics, and psychophysics, all of them largely confined to the university laboratories.

These latter areas are not sharply separated. I myself started out in chemical physics, studying the light absorption of dyes and similar molecules. I found that this led me to a study of chlorophyll which was a biological molecule and therefore biophysics. And then it led me to a study of the visual pigments of the human eye, which are the first elements struck by light in the psychological act of vision, and therefore psychophysics.

Biophysics proper is not what I call an exploding field at present but one that is just simmering along nicely. An important area of study lately has been the transfer of light energy between neighboring biological molecules. Many workers feel that such a transfer might be the first step in vision and the first step in photosynthesis, as well as the first step in the damaging of tissue cells by nuclear radiation. This makes it a hot subject and numerous international conferences on it are being held. My only regret is that some people have chosen to call the subject "bioenergetics," which makes it sound more like a branch of naturopathy than a field of science.

Although the subject of energy transfer is of wide interest, the actual results are rather tenuous, partly because the experimental work has to be exceedingly painstaking. During a summing up session at the Brookhaven conference on this subject recently, the participants listed roughly a dozen new physical instruments and tools that they wished could be invented in order to facilitate work in this field. For example, methods are needed that would permit us to observe or infer the first chemical reaction steps of many biologically important molecules, including the primary molecules in vision, in photochemistry, in genetics, and the antibodies. Conceivably such methods of observation will evolve out of the fluorescence-interaction methods of Michael Kasha, or the tracer technique of Melvin Calvin, or the recent ingenious substitution technique of Engleberger and the Koshlands, or out of a completely new approach. The question remains open. Work is in progress.

Biophysics merges into a closely related area that today is anything but placid, the area of molecular biology. It has had an explosive development in the last 10 years. It was notable first for the numbers of physicists, chemists, and doctors attracted into it by such inspiring microbiologists as Salvador Luria and Max Delbruck. Now it is the scene of the last two Nobel Prizes in medicine, the one to Joshua Lederberg, George Beadle, and Edward Tatum, and one to Severo Ochoa and Arthur Kornberg. And sitting at conferences, one watches with pleasure and astonishment the beautiful demonstrations of the other theorists and experimenters, wondering which of them will be next to get the prize.

Will it be James Watson and F. H. C. Crick, with their two-strand model of the DNA molecule so thoroughly proved in the last few years? Will it be Meselson and Stahl, or Taylor, Woods, and Hughes, with their beautiful tracer methods of testing the model? Will it be Seymour Benzer, with his analysis of microgenetic characters a thousand times finer than any ever examined before? Will it be Cy Levinthal or some of his competitors, racing to see who can crack the great cryptogram, the code that translates the DNA molecule into the other cell materials? Or Theodore Puck, with his method of culturing perfect tissue cells? Or Albert Coons, with his fluorescent method of labeling antibodies?

The shrewdness of such men in reasoning and experiment has brought a new atmosphere to biology. Needless to say, the older scientists are not entirely sympathetic. Oversimplification, they snort. One eminent gentleman said, and I quote: "You know there are scientists, and there are people in science who are not doing science at all. We need their auxiliary work—they build apparatus, they make minor studies—but they are not scientists."

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To which the young microbiologist replies: "Well, there are two kinds of biologists, those who are looking to see if there is one thing that can be understood, and those who keep saying it is very complicated and that nothing can be understood."

Sixty years ago when Pasteur was also trying to see if there was one thing that could be understood, the audience hung breathless on his results. I think this could happen again today. At any rate, molecular biology is, next to nuclear physics, the most intellectually exciting field for a young person to enter at the present time.

A third area, still more biological, is that of the recent work on evolution discussed at the Darwin Centennial Celebration this past fall at the University of Chicago. This celebration honored the 100th anniversary of publication of "Origin of Species." Several of the papers offered dramatic new illustrations of the Darwinian principle of evolution. One of these by Nicholas Tinbergen demonstrated that it is not just bones and muscles that evolve but also behavior, and he gave numerous examples of such evolution as found in the behavior of birds that nest in cramped and dangerous places.

In another paper, F. Clark Howell and Sherwood Washburn showed from the study of old skulls that man's brain has increased in size rapidly since he began using tools and fire, and is now almost three times as large as it was then. Another study, by Cesare Emiliani, showed that this evolution of our brains may have taken a time much shorter than anyone has supposed, only a few hundred thousand years according to new geological dates. In short, intelligent man, as we know him, may have developed with dramatic suddenness as a result of using his hands to manipulate the world around him. Perhaps we are still developing at the same remarkable rate. It was better brains that determined which of the man-creatures would survive then; and it is better brains that will help us to survive now, we hope.

At the Darwin conference there was also much said about man's population problem today, which is a terribly timely aspect of evolution. There was something like a three-cornered debate on population, between the grandson of the founder of evolution, Sir Charles Darwin; the biologist, Sir Julian Huxley; and another Nobel Prize winner, H. J. Muller. Darwin says that in 50 to 100 years, the overcrowding of our increased population will destroy our civilization forever, and cannot be reversed, because people and groups who want to have many children will go on having them, whether it is good for the whole community or not. Huxley is more optimistic and thinks the population explosion can be stopped if we are intelligent enough to find incentives for stopping it. And Muller says that it is already urgent for us to take really dramatic steps, that is, to begin selective breeding, if we want civilization as we know it to continue.

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All three men are united as scientists in saying that we are doomed if we do nothing to reduce our birth rates; they differ only in how much they think, as hopeful men, that we can do nationally and internationally about the problem. Many people may not approve of scientists offering to give their scientific knowledge and counsel to human affairs in this way, just as many people did not approve of the theory of evolution itself a century ago. But I think that the reporter who has the courage to try to transmit this population debate to the public in a full and fair way may find that he has a story as exciting, as controversial, and finally as important to history, as the debate over evolution itself ever was.

INCOMPLETENESS

The intelligent layman should be told of a third quality, the incompleteness of science.

All science has gaps in it. The most familiar are the inevitable small gaps, the data that one could still go on taking, the unexamined minor assumptions, or the unresolved questions. Most of these do not bother us because we realize that a scientific age is an age of tentative conclusions and working rules that may well have to be changed later. Yet it is important for us to emphasize this incompleteness, especially to the young, because they have hopes and aspirations and they want an open-ended story, with something left for them to do when they finally take our places.

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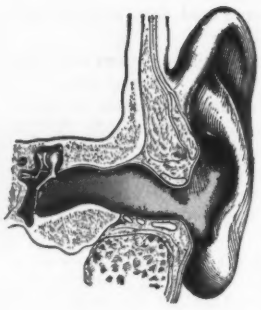

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What is not so often realized is that science is incomplete in more serious ways, with gaps that scientists themselves, tied to their own narrow specialties, hardly realize the existence of. In some ways, for all its diversity, science is narrower now than it has ever been before. Few of the men who work on photosynthesis know anything about physics; few of the men who work on nervous tissue know any organic chemistry; few of the men who work on the brain have any understanding of the mind. There are exceptions. An Enrico Fermi or Edward Teller or Harold Urey can work on stars or nuclei or molecules, just as his fancy strikes him. A John von Neumann can work on quantum mechanics as well as the theory of games. A Percy Bridgman can work on solids as well as logic. But for every such man, there are hundreds who spend their lives repeating the kind of experiments they did for their doctor's degree.

Even the intellectual leaders are blind to some fields. For over a century, some of the greatest physicists, Young and Maxwell and Helmholtz and Schrodinger, thought it of the greatest importance to study human visual perception. Today, I daresay not one of the twenty leading physicists in this country would have even a casual interest in this subject. Likewise, interest in the philosophy of physics has dropped almost to zero among the bright young men; yet this field may simply be waiting for a new Ernst Mach who will stir it up and pave the way for another revolution like relativity. And we have all noticed such blind spots in the more technical fields, where it has suddenly been discovered, for example, how badly everyone has been neglecting oceanography, an area perhaps of central importance for our future food and resources.

I think these gaps cry out for reviewers and critics broadly trained and broadly read, who are competent to see what the neglected areas are and to encourage the young to go into them. A balanced and vigorous science requires a balanced and vigorous criticism. To paraphrase Clemenceau's remark that war is too important to be entrusted to generals, science is too important to be left to the scientists. Intelligent outside evaluation is good for a department, it is good for a university, and it would be good for science itself. The incompleteness of science is a challenge to great criticism. It is a challenge which I think will be met in the very finest presentations of science to the public.

THE LIFE OF MAN

It is a thrilling thing to be participating as actor or observer in the scientific revolution of our times, as science enters and transforms the life of man. Some are depressed by the hard work that must be done to make a world, and by the constant threat of failure and catastrophe. Some say philosophy has failed. I think this is only a momentary lapse between the old philosophy and the new that rises already in the laboratories. I think this century marks in history a revolution in man's outlook even more profound, if possible, than the accompanying revolution in science and technology. Man has suddenly found himself. He has explored all the earth and stepped outside it. He taps the sun's source of energy and stands ready to manipulate the weather and use the oceans. He measures back to the beginnings of time and out to the ends of space and sees his own sudden emergence, a thinking creature spun out of light and air and water and holding power in his hand, yet probably only one of millions of such creatures on other worlds.

And the power man holds is not only technical power but something far greater still, evolutionary power. He creates new species of plants and animals, halts or speeds up evolution, manipulates heredity like chemistry, and prepares to turn his own flimsy organism into whatever fantastic and brilliant and powerful form he most desires. The whole future is open-ended, waiting for us. This is not a time of philosophical decay but a time of birth. In the midst of our worry and fear, man reasoning, man the creator, is about to be born. The old philosophies will burst off and blow away, unable to contain so fierce a fire. From now on, in every century, man will look back and say, this was the one.

When we speak of the sweep and excitement of science, we are speaking of the cradle of man.

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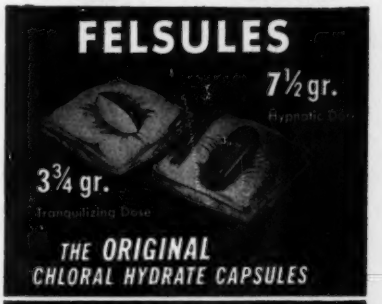

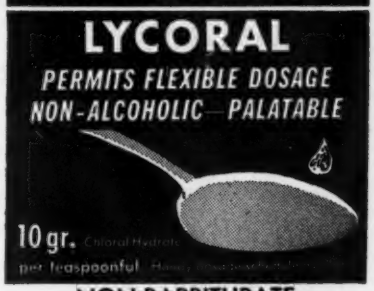

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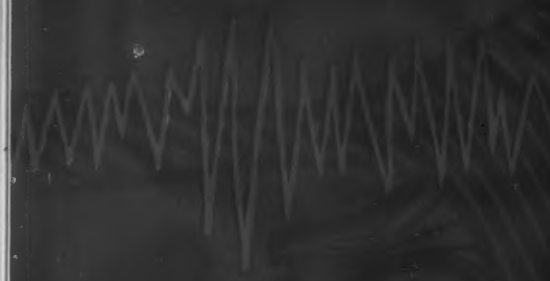

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References: (1) Voulgaris, D. M.: Dysmenorrhea: Cramps or Psyche?, Scientific Exhibit, 108th Ann. Meet., Atlantic City, June 8-12, 1959. (2) Detailed reports in Mead Johnson research files. (3) Voulgaris, D. M.: Obst. & Gynec. *15*: 220-222 (Feb.) 1960.

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Books received

Books received for review during the period from July 5 to August 5, are listed below. Reviews will be published as space permits.

ZINSSER MICROBIOLOGY. By David T. Smith, M.D., Professor of Microbiology and Associate Professor of Medicine, Duke University School of Medicine; Norman F. Conant, Ph.D., Professor of Mycology and Associate Professor of Microbiology, Duke University School of Medicine; Joseph W. Beard, M.D., Professor of Surgery in charge of Experimental Surgery, Duke University School of Medicine; Hilda Pope Willett, Ph.D., Associate Professor of Microbiology, Duke University School of Medicine; John R. Overman, M.D., Associate Professor of Microbiology and Assistant Professor of Medicine, Duke University School of Medicine; John E. Larsh, Jr., Sc.D., Professor of Parasitology, School of Public Health and School of Medicine, University of North Carolina, Duke University School of Medicine; Ivan W. Brown, Jr., M.D., Associate Professor of Surgery, Duke University School of Medicine; D. Gordon Sharp, Ph.D., Professor of Biophysics, University of North Carolina School of Medicine; and Mary A. Poston, M.A., Associate in Microbiology, Duke University School of Medicine. Ed. 12. Cloth. Pp. 1026, with illustrations. Price $13.00. Appleton-Century-Crofts, Inc., 35 West 32nd Street, New York 1, 1960.

THE PRINCIPLES AND PRACTICE OF MEDICINE. A Textbook for Students and Doctors. By Sir Stanley Davidson, B.A. Cantab., M.D., F.R.C.P. Edin., F.R.C.P. Lond., M.D. Oslo, F.R.S. Edin., Physician to H. M. the Queen in Scotland; Professor of Medicine and Clinical Medicine, University of Edinburgh, 1938-59; Physician-in-charge, Royal Infirmary, Edinburgh, 1938-59; Regius Professor of Medicine, University of Aberdeen, 1930-38; and Past and Present Members of the Staff of the Department of Medicine, University of Edinburgh, and Associated Clinical Units. Ed. 5. Cloth. Pp. 1112, with illustrations. Price $8.00. The Williams & Wilkins Company, 428 East Preston Street, Baltimore 2, 1960.

NEUROLOGY SIMPLIFIED. A Practical Approach to the Early Diagnosis and Treatment of Neurologic Diseases Written Especially for General Practitioners and Students. By David Joseph LaFia, M.D., Assistant in Neurosurgery, Jefferson Medical College and Hospital, Philadelphia, Pennsylvania; Special Trainee in Neurophysiology, Division of Neurosurgery, National Institute of Nervous Diseases and Blindness; the Johns Hopkins University School of Medicine, Baltimore, Maryland. Cloth. Pp. 175, with illustrations. Price $6.75. Charles C Thomas, Publisher, 301-327 East Lawrence Avenue, Springfield, Illinois, 1960.

PROGRESS IN PSYCHOTHERAPY. Volume V. Review and Integrations. Edited by Jules H. Masserman, M.D., Professor of Neurology and Psychiatry, Northwestern University and Director of Education, Illinois State Psychiatric Institute, Chicago; and J. L. Moreno, M.D., New York University, New York City; Director, Institute of Psychodrama and Group Psychotherapy, Beacon, New York. Cloth. Pp. 262. Price $8.50. Grune & Stratton, Inc., 381 Fourth Avenue, New York 16, 1960.

EXPERIMENTS AND OBSERVATIONS ON THE GASTRIC JUICE AND THE PHYSIOLOGY OF DIGESTION. By William Beaumont, M.D., Surgeon in the United States Army. Facsimile of the Original Edition of 1833, together with a biographical essay: A Pioneer American Physiologist By Sir William Osler. Paper. Pp. 292. Price $1.50. Dover Publications, Inc., 180 Varick Street, New York 14, 1959.

EMOTIONAL MATURITY. The Development and Dynamics of Personality. By Leon J. Saul, M.A., M.D., Professor of Psychiatry and Chief of the Section of Preventive Psychiatry, University of Pennsylvania School of Medicine; Psychiatric Consultant, Swarthmore College; Training Analyst, Philadelphia Psychoanalytic Institute. Ed. 2. Cloth. Pp. 393, with illustrations. Price $6.50. J. B. Lippincott Company, East Washington Square, Philadelphia 5, 1960.

MAN'S POSTURE. Electromyographic Studies. By J. Joseph, M.D., M.R.C.O.G., Reader in Anatomy, Guy's Hospital Medical School, London. Cloth. Pp. 88, with illustrations. Price $5.50. Charles C Thomas, Publisher, 301-327 East Lawrence Avenue, Springfield, Illinois, 1960.

COLLECTED PAPERS OF THE MAYO CLINIC AND THE MAYO FOUNDATION. Vol. 51. Compiled by George G. Stilwell, A.B., M.D. Cloth. Pp. 825, with illustrations. Price $14.00. W. B. Saunders Company, West Washington Square, Philadelphia 5, 1960.

DICTIONARY OF ABBREVIATIONS IN MEDICINE AND THE RELATED SCIENCES. By Edwin B. Steen, Ph.D., Professor of Anatomy and Physiology, Western Michigan University. Cloth. Pp. 98. Price $2.50. F. A. Davis Company, 1914-16 Cherry Street, Philadelphia 3, 1960.

STUDIES ON THE TECHNIQUE OF SKIN TESTING IN ALLERGY. By W. J. F. Van Der Bijl, M.D. Cloth. Pp. 100, with illustrations. Price $5.50. Charles C Thomas, Publisher, 301-327 East Lawrence Avenue, Springfield, Illinois, 1960.

CLASSICS OF MEDICINE AND SURGERY (formerly titled: *Epoch-making Contributions to Medicine, Surgery and the Allied Sciences*). Collected by C. N. B. Camac. Copyright 1909. Paper. Pp. 451. Price $2.25. Dover Publications, Inc., 180 Varick Street, New York 14, 1959.

ON THE SHOULDERS OF GIANTS. The Bea Wright Story. By Eleanor Chappell. Cloth. Pp. 105. Price $2.75. Chilton Company, Book Division, 56th and Chestnut Streets, Philadelphia 39, 1960.

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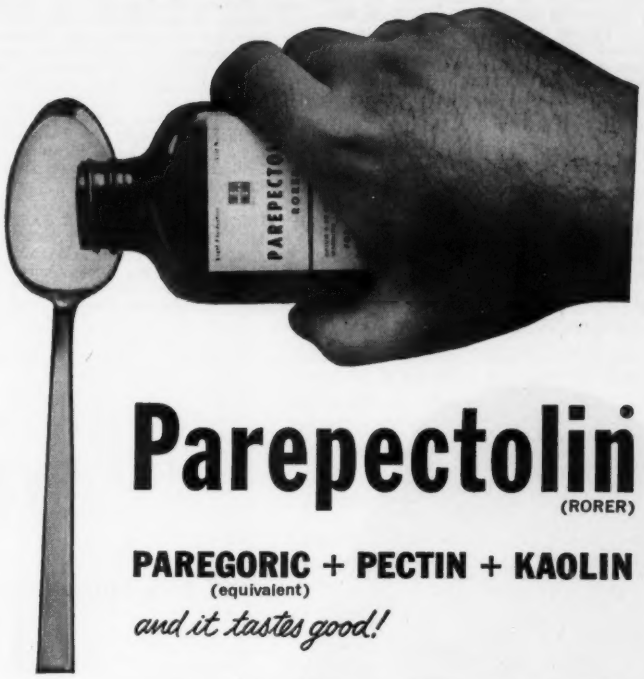

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Application. By Charles Wesley Shilling, M.D., Sc.D., Deputy Director, Division of Biology and Medicine, United States Atomic Energy Commission, Washington, D.C. Cloth. Pp. 223, with illustrations. Price $6.75. Grune & Stratton, Inc., 381 Fourth Avenue, New York 16, 1960.

PRACTICAL CLINICAL MANAGEMENT OF ELECTROLYTE DISORDERS. By William J. Grace, Director of Medicine, The St. Vincent's Hospital of the City of New York; Professor of Clinical Medicine, New York University School of Medicine; formerly, Associate Professor of Medicine, Cornell University Medical College. Cloth. Pp. 132, with illustrations. Price $4.95. Appleton-Century-Crofts, Inc., 35 West 32nd Street, New York 1, 1960.

LECTURE NOTES ON OPHTHALMOLOGY. By Patrick D. Trevor-Roper, M.A., M.D., B. Chir. (Cantab.), F.R.C.S., D.O.M.S. (Eng.), Assistant Ophthalmic Surgeon, Westminster Hospital; Chief Clinical Assistant, Moorfields Eye Hospital; Curator, Department of Pathology, The Institute of Ophthalmology, University of London. Cloth. Pp. 94, with illustrations. Price $3.50. Charles C Thomas, Publisher, 301-327 East Lawrence Avenue, Springfield, Illinois, 1960.

SOURCE BOOK OF MEDICAL HISTORY. Compiled with notes by Logan Glendening, M.D. Copyright 1942. Paper. Pp. 702. Price $2.75. Dover Publications, Inc., 180 Varick Street, New York 14, 1960.

STRUCTURE AND FUNCTION OF THE BODY. By Catherine Parker Anthony, R.N., B.A., M.S., Assistant Professor of Nursing, Science Department, Frances Payne Bolton School of Nursing, Western Reserve University; formerly Instructor of Anatomy and Physiology, Lutheran Hospital, Cleveland, Ohio; formerly Instructor of Anatomy and Physiology, St. Luke's Hospital, Cleveland, Ohio; formerly Assistant Instructor of Anatomy and Physiology, Frances Payne Bolton School of Nursing, Western Reserve University. Cloth. Pp. 144, with illustrations. Price $3.00. The C. V. Mosby Company, 3207 Washington Boulevard, St. Louis 3, Missouri, 1960.

SURGICAL ERRORS AND SAFEGUARDS. By Max Thorek, M.D., LL.D., SC.D., F.I.C.S., F.B.C.S., F.P.C.S. (Hon.), D.C.M., F.R.S.M., Professor of Surgery, Cook County Graduate School of Medicine; Surgeon-in-Chief, American Hospital of Chicago; Founder and Secretary General of the International College of Surgeons; formerly Attending Surgeon, Cook County Hospital, and Consulting Surgeon, Municipal Tuberculosis Sanitarium; Honorary Fellow, Surgical Society of Rome, Italy; Honorary Fellow, Piedmont Surgical Society; Fellow, Mexican Academy of Surgery; Honorary Fellow, Peruvian Academy of Surgery; Fellow (Honoris Causa), Royal Surgical Society of Bulgaria; Fellow, National Academy of Medicine, Colombia; Corresponding Member, Societe de Chirurgeins de Paris; Fellow (Honoris Causa), Vienna Medical Society; Honorary Fellow, Tusco-Umbrian Surgical Society; and 23 contributors. Ed. 5. Cloth. Pp. 652, with illustrations. Price $25.00. J. B. Lippincott Company, East Washington Square, Philadelphia 5, 1960.

DISEASES OF THE NAILS. By V. Pardo-Castello, M.D., formerly Professor of Dermatology and Syphilology, University of Havana Medical School; Member and Past-President of the American Dermatological Association, Honorary President of the Cuba Dermatological Association; Honorary Foreign Member of the British Dermatological Association; of the Sociedad Dermatologica Argentina; Sociedad Mexicana de Dermatologia; Academia Española de Dermatologia, and Corresponding Member of the Dermatological Societies of Brazil, Iran, and Uruguay; formerly Chief, Dermatological Service, University Hospital, Havana, Cuba; and Osvaldo A. Pardo, M.D., formerly Instructor in Dermatology, University of Havana, Medical School; Secretary General of the Cuba Dermatological Society; Dermatologist, University Hospital; Dermatologist, Municipal Medical Service, Marianao, Cuba. Ed. 3. Cloth. Pp. 284, with illustrations. Price $8.50. Charles C Thomas, Publisher, 301-327 East Lawrence Avenue, Springfield, Illinois, 1960.

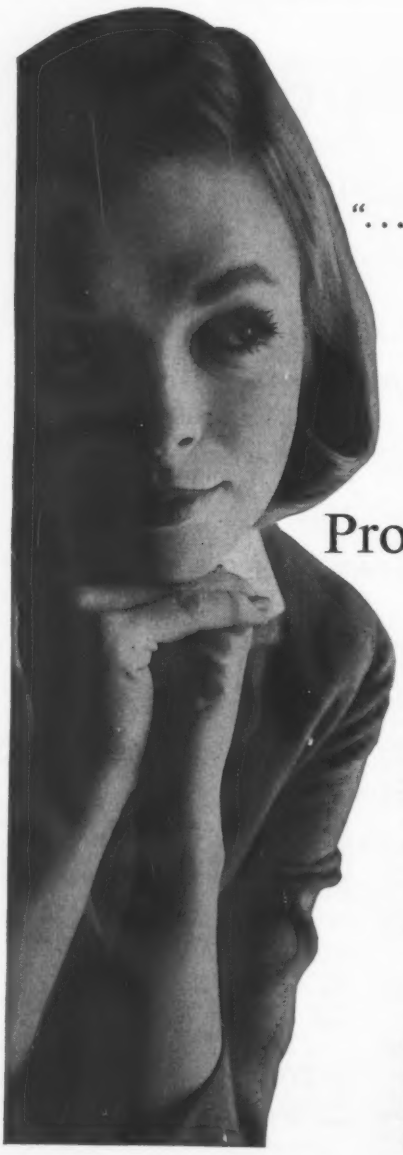
GERIATRIC NURSING. By Kathleen Newton, R.N., M.A., formerly Associate Professor in Out-patient Nursing, The Cornell University-New York Hospital School of Nursing, New York, N.Y; formerly Department Head, Out-Patient Nursing Service, The Cornell University-New York Hospital Medical Center; formerly Staff Nurse, The Visiting Nurse Association of Plainfield and North Plainfield, N.J. Ed. 3. Cloth. Pp. 483, with illustrations. Price $6.50. The C. V. Mosby Company, 3207 Washington Boulevard, St. Louis 3, 1960.

INTRA-OSSEOUS VENOGRAPHY. By Robert A. Schobinger, M.D., Clinical Instructor in Surgery, Albert Einstein College of Medicine, New York, N.Y.; Section Chief, Surgical Service, Veterans Administration Hospital, Bronx, N.Y., formerly Associate Cancer Research Surgeon, Roswell Park Memorial Institute, Buffalo, N.Y. Cloth. Pp. 243, with illustrations. Price $14.50. Grune & Stratton, Inc., 381 Fourth Avenue, New York 16, 1960.

EXPERIENCES WITH CONGENITAL BILIARY ATRESIA. By Julian A. Sterling, M.D., Sc.D., F.A.C.S., Senior Attending Surgeon, Albert Einstein Medical Center; Assistant Professor of Surgery, Graduate School of Medicine, University of Pennsylvania; Assistant Professor of Surgery, Temple University School of Medicine, Philadelphia, Pennsylvania. Cloth. Pp. 68, with illustrations. Price $5.50. Charles C Thomas, Publisher, 301-327 East Lawrence Avenue, Springfield, Illinois, 1960.

THE HEART IN INDUSTRY. By 24 authors. Edited by Leon J. Warshaw, M.D., F.A.C.P., Consultant in Occupational Health; Medical Director, Paramount Pictures Corporation; Medical Director, United Artists Corporation, New York. Cloth. Pp. 677, with illustrations. Price $16.00. Paul B. Hoeber, Inc., 49 East 33rd Street, New York 16, 1960.

PEDIATRIC NURSING. By Gladys S. Benz, R.N., M.A., Chairman of the Department of Maternal and Child Nursing, State University of Iowa, College of Nursing, Iowa City, Iowa; formerly, Instructor, Pediatric Nursing, Cincinnati Children's Hospital; Instructor, Bellevue Schools of Nursing, New York City; Supervisor, St. Louis Children's Hospital; Head Nurse, Sarah Morris Hospital (Children's Division of Michael Reese Hospital), Chicago, Ill.; Head Nurse, University Hospital, Minneapolis, Minn. Ed. 4. Cloth. Pp. 572, with illustrations. Price $6.00. The C. V. Mosby Company, 3207 Washington Boulevard, St. Louis 3, 1960.



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1. Schwartz, H.A.: Editorial, Minnesota Medicine *42*:1279, 1959.

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*Mozan, A. A.: Postgraduate Med. 26:542, 1959

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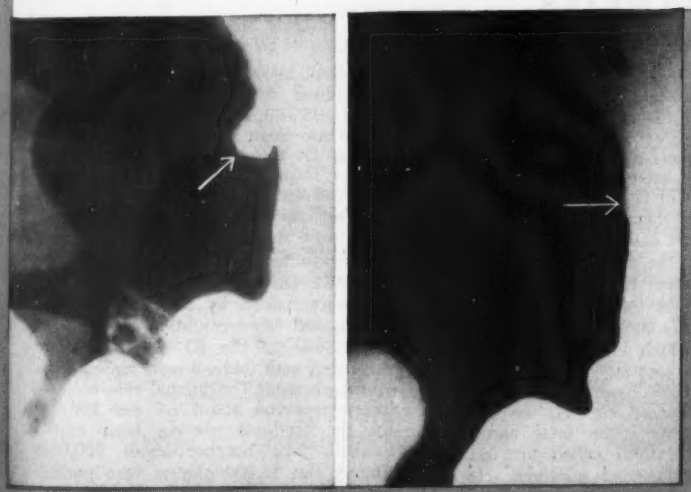

Pretreatment roentgenogram made on January 28, 1957 shows a large niche on the upper third of the lesser curvature.

Roentgenogram made on February 23, 1957 shows only a slight indentation on the lesser curvature.

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Good adolescent driving reduces traffic toll

"In our culture, a child is passed from one authority to another—home, school, church, community. He is observed, evaluated, and regulated. And then suddenly he can get in his car and drive far enough in a short time to be anonymous and free, free to maim and kill himself and others. What is the solution?"

*Reprinted from *Public Health Reports*, March 1960.

Dr. James L. Malfetti, executive officer of the safety, research and education project of Columbia University, presenting this theme, stated that authorities claim drivers cause between 80 and 90 percent of the traffic accidents in the United States. He emphasized that drivers 16 to 24 years of age cause a disproportionately large number of the accidents which kill approximately 40,000 people a year.

Stating that if we can do something about adolescent drivers, we can significantly reduce the total number of accidents, Malfetti called first on parents to set a good example. He also called upon community leaders to build recognition of moral responsibility for traffic damage, injuries, and death through talks with license applicants.

Other recommendations by Malfetti were:

- Higher quality tests for licenses.
- Realistic speed regulations.
- Improved driver education courses, emphasizing student decisions on good driving techniques.
- Rewards for courteous driving and lifesaving maneuvers.
- Clinics for chronic adolescent traffic violators.

Malfetti recognized that no driver, adolescent or adult, is immune to accident-producing behavior. He urged full use of mechanical devices in accelerating, steering, and braking, to correct or warn drivers when safe limits are exceeded. Such devices are available, Malfetti said, and others can be developed.

Rather than attempts to change basic personality traits of drivers, Malfetti recommended full use of techniques to curb the automobile when the driver fails to function at his efficient best.

Fatal injuries in competitive sports*

Several million Americans participate in competitive sports, such as football, baseball, and boxing, often unmindful of the hazards involved. Although precise data are not available on the number of people injured in organized sports, information from various sources indicates that sprains, strains, and contusions resulting in temporary disability are quite common, and that the annual toll includes many severely injured and not a few deaths.

Football accounted for 108 deaths in the United States during the 5-year period 1955-59, according to data issued by the American Football Coaches Association. Of this total 81 sustained their injuries in activities directly associated with the game, such as tackling and blocking; tackling was responsible for more than one fourth of the fatalities directly connected with the game. The 27 deaths indirectly attributable to football were caused by heat stroke, heart failure, and other conditions.

Fifty-one of the 81 deaths directly associated with football were among high school players. The annual rate of fatal injury averaged about 1.7 per 100,000 for the students playing high school football, who number about 600,000. Among the 66,000 players who participated in college football, the rate was slightly higher. Several deaths a year

*Reprinted from *Statistical Bulletin*, Metropolitan Life Insurance Company, May 1960.

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supplied: In bottles of 60 black-and-white scored tablets. Prescription only.

References: 1. Steigmann, F., et al.: Am. J. Gastroenterol. 33:109 (Jan.) 1960. 2. Hock, C. W.: to be published. 3. Leming, B. H., Jr.: Clin. Med. 6:423 (Mar.) 1959. 4. Data in Roerig Medical Department Files.

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occur among sandlot players, and an average of one a year among professional or semiprofessional football players. The National Football League, however, with about 400 players, had no fatalities in the 1955-59 period.

TABLE 1
NUMBER OF ACCIDENTAL DEATHS FROM FOOTBALL
United States, 1955-59

Type	Direct	Indirect
Total	81	27
College	7	4
High school	51	18
Professional and semiprofessional	5	1
Sandlot	18	4

Source of basic data: Dr. Floyd R. Eastwood, Chairman, Committee on Injuries and Fatalities, American Football Coaches Association.

The hazard of fatal injury in baseball is relatively small. In the professional major leagues, which include more than 400 players, there has not been a fatal injury since 1920. In the past 5 years, relatively few fatalities have occurred in amateur baseball, although more than two million boys participate in the sport annually as members of scholastic teams, the Little League, American Legion Junior, and similar organizations. The infrequent instances of fatal injury resulted from various mishaps: players being hit on the head with a ball while they were batting or running bases; one player was killed when his head hit the base as he was sliding "home," and another when playing as infielder was struck on the head with a batted ball during practice.

In the years 1955-59, boxing injuries took the lives of at least 12 amateur fighters and of six professionals. Most of these fatalities resulted from mishaps in actual bouts; very few occurred while men sparred during training. A disturbing factor is the recent increase in deaths among amateur boxers, five lives being lost in 1959 alone. Exact figures are lacking on the number of boxers in the United States, but there appear to be several thousand professionals who are licensed to fight and many times that number who are amateurs.

Occasional fatalities also occur in other competitive sports, such as basketball, skiing, and ice hockey, but there are no over-all figures either on injuries or deaths for these sports.

The incidence and severity of injuries sustained in competitive sports can be decreased by players having proper equipment and facilities, good instruction and supervision, by adequate health examinations of athletes, and prompt medical attention to injuries. Sports authorities have recently instituted a number of safety precautions in both amateur and professional sports. Although these measures have borne fruit, competitive sports can be made even safer than they are now.

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New horizon in mass inoculation*

Richard L. Towle, M.A.†

Mass immunization programs are beset with many difficulties, not least of which is the time-consuming operation associated directly with inoculation of the vaccinee. Several years ago, U.S. Army scientists applied the jet injection principle[1] in the development of an automatic multiple-dose syringe[2] for immunizing large groups of people. This instrument, with some improvements, has been employed on a limited scale by the Armed Forces with encouraging results. The time required to vaccinate groups of men was much less when the jet injector was used than when the ordinary syringe and needle method was followed. Moreover, experience indicated that the immunological responses elicited by several types of vaccine administered by jet injection were comparable to those obtained by the usual methods.[3-5]

*Reprinted from *Public Health Reports*, June 1960.

†Mr. Towle is field sanitarian adviser with the International Cooperation Administration's U.S. Operations Mission to Pakistan, Dacca, East Pakistan.

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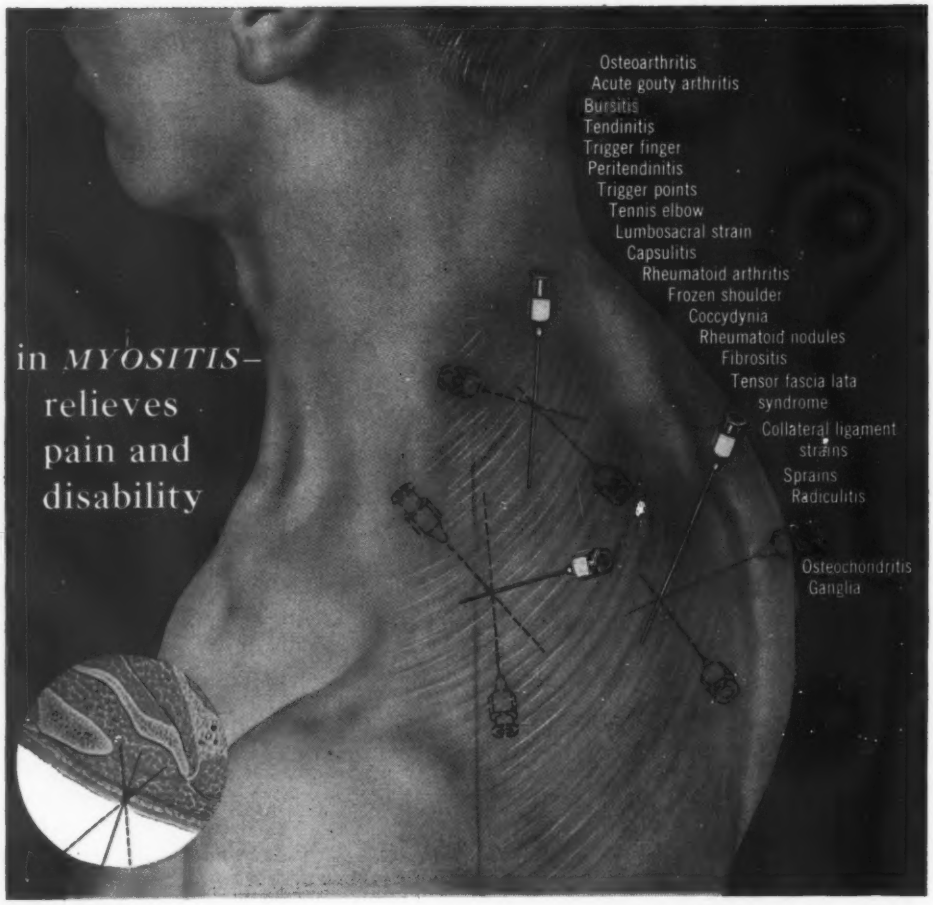

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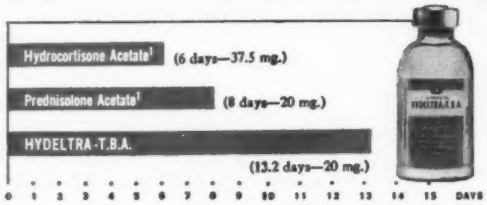
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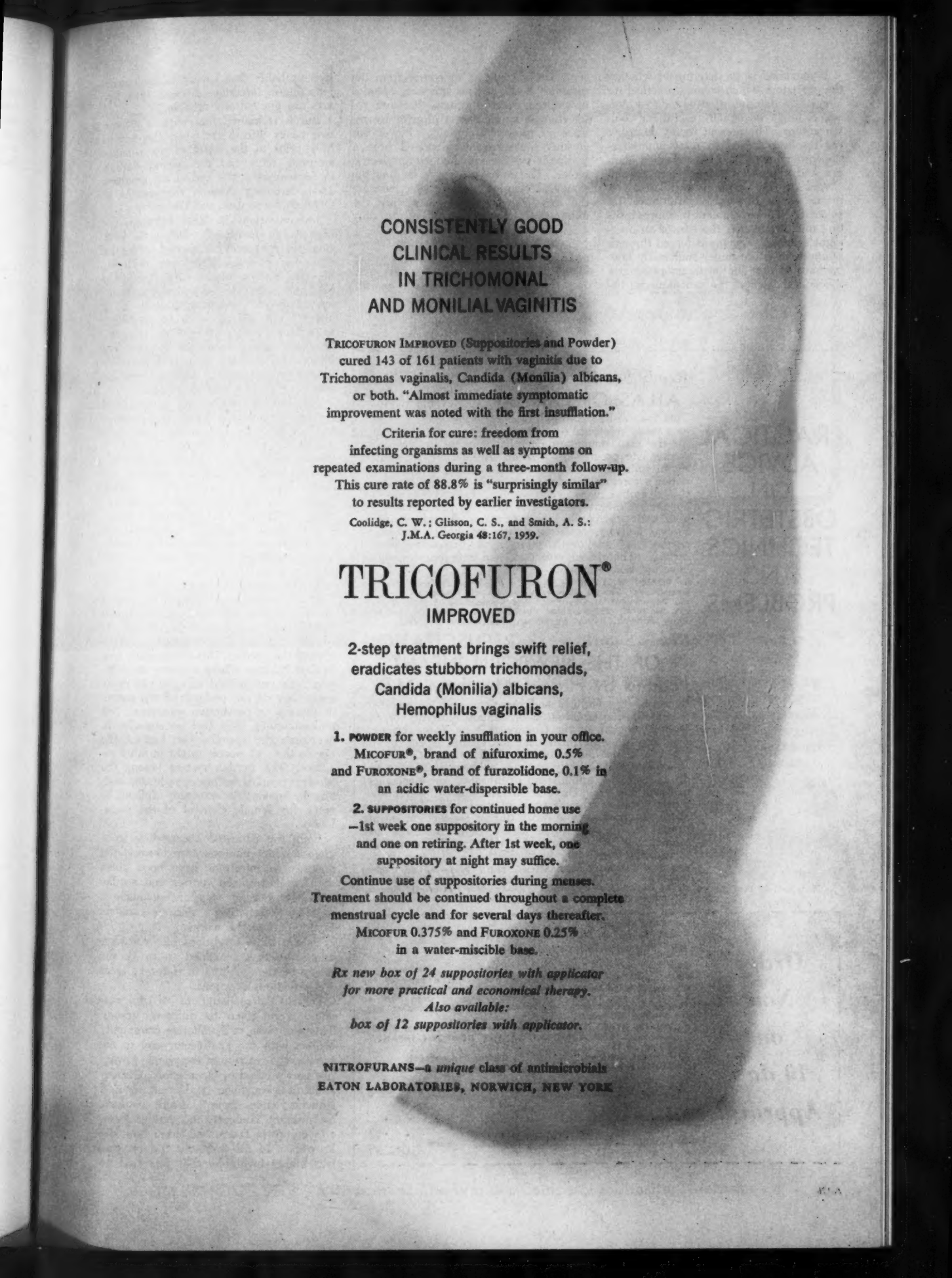

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Coolidge, C. W.; Glisson, C. S., and Smith, A. S.: J.M.A. Georgia 48:167, 1959.

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It remained to be determined whether the procedure which seemed practical for large-scale immunization of military personnel might be equally useful for civilian groups. The present report describes the results obtained in mass immunization programs in Pakistan in which cholera and typhoid vaccines were administered to the civilian population by means of a Hypospray Multidose Jet Injector.[A] This instrument is compact, fitting into a container the size of an overnight suitcase. Vaccine is forced through a minute aperture under sufficiently high pressure so that the jetstream penetrates the skin and enters the subcutaneous tissue. The vaccine, in its course from the reservoir bottle to the aperture, remains in a closed, sterile system. Pressure for injection is applied to a plunger by release of powerful springs. Power for cocking the springs is obtained from a hydraulic system activated by an electric motor. The entire process of loading the discharge chamber with vaccine, cocking the drive springs, and inoculating the immunogen into the patient requires only a few seconds.

East Pakistan is one of the few remaining endemic areas of cholera in the world; the Province usually suffers over 15,000 attacks and 10,000 deaths yearly.[6] It is probable that, owing to inadequate reporting of infectious diseases, these figures are not entirely reliable.

But it is known that cholera reaches two peaks during the year, the first in May prior to the onset of the summer monsoon rains and the second starting in September at the end of the monsoon and continuing through the months of October, November, and December.

Immunizations in East Pakistan, except during emergencies such as the 1958 smallpox epidemic, are carried on by the limited staff of the Directorate of Health Services. The population of East Pakistan is approximately 46 million people. There are about 400 sanitary inspectors, or about 1 per 100,000, each supervising 2 to 3 health assistants who are responsible, among other duties, for the complete immunization of the people. This means only 1 vaccinator and inoculator for approximately every 40,000 persons.

Immunization teams are handicapped by travel conditions. There are comparatively few roads, rail service is limited, and air service within each Province is almost nonexistent. These limitations, coupled with the fact that most of the land is under water for several months during the monsoon, severely hamper the mobility of the health workers. Within each thana, a political unit of roughly 100,000 population, nearly all local movement is confined to foot or small country boats.

The psychological aspect of the use of the syringe and needle, itself is another obstacle to immunization. In any population of any country, many people actually shrink from not only the sight but the idea of the needle. This is especially true in East Pakistan where so many are comparatively uneducated villagers. In many areas they do not understand the nature of disease or preventive measures. Not understanding, they feel no stimulus to overcome the apprehension against the needle the way people might in other societies. The purdah system among the Moslem peoples further complicates matters by making it extremely difficult to reach the female element of the population.

Even the educated classes have misgivings about immunization because the majority of injections have been given with an unsterilized syringe and needle, with the risk of transmitting malaria, syphilis, or hepatitis, which are common in this part of the world.

Taking these conditions into consideration, the task remained to prove the utility of the machine in different areas and in various situations.

Initially, demonstrations of the machine were given to different groups. This was done to familiarize community leaders with the jet injector and to determine the reaction of the people toward this new method of inoculation. Demonstrations were given to doctors, medical students, civic groups, health workers, the military, students, and various women's groups in Dacca and throughout the Province. In all instances the reaction was highly favorable. The fact that no

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By ROBERT WILLSON, M.D., M.S., Professor of Obstetrics and Gynecology, Temple University School of Medicine; Head of the Department of Obstetrics and Gynecology, Temple University Hospital, Philadelphia, Pennsylvania. Illustrated by Miss Daisy Stillwell. Ready November, 1960. About $15.00.

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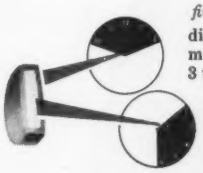

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needle was used seemed to impress the people more than any other factor. Also encouraging were the numerous comments regarding the relative absence of pain and the speed of inoculation.

Although the general response to these numerous demonstrations was completely positive, the majority of these people were of the educated classes. It remained to be seen whether the reaction would be as favorable among the less educated groups, to which most of the population of East Pakistan belong. These were the people exposed to disease, the ones who would determine the effect of immunization efforts.

During the following months, accompanied by a Pakistani team usually comprising a doctor and two sanitary inspectors, I took the injector into many areas of the Province, inoculating for cholera. We inoculated people in areas easily accessible, in some almost completely inaccessible, and in cities, small towns, and market areas. We tried to select places which would give us a cross section of East Pakistan.

INOCULATIONS IN URBAN AREAS

In mass inoculation in city areas, it is thought that the machine proved itself without doubt. In most instances, inoculations were done from a station wagon equipped with a generator which provided electricity for the injectors and a microphone and speaker for publicity. There was no problem in attracting crowds; a constant line waited for inoculation.

An excellent example of the capability of the machines was shown in Dacca during the October-November mass inoculation program against cholera. Thousands were inoculated daily, with two injectors in operation. The highest figure for 1 day totaled 6,759. Sanitary inspectors and doctors, working with syringe and needle during the campaign, were reporting about 100 inoculations per inoculator per day. It was clearly indicated that one injector could do the work of 25 to 30 men.

The only experience of inoculating with the injectors outside of East Pakistan was in the first week of July in Karachi, West Pakistan. Owing to excessive rainfall in June, much of Karachi was flooded. Nearly all of the refugee colony areas were under water, and there arose considerable danger of a typhoid epidemic. Thirty centers were set up throughout the stricken area for inoculation against typhoid fever, paratyphoid fever, and cholera. The injectors were brought from East Pakistan to aid in the fight. In 4½ days, with only one machine operating, approximately 20,000 persons were inoculated. The entire staff of the 30 centers, inoculating by syringe and needle, were only able to inoculate about the same number during the same period.

As the work in a municipal area is carried on most successfully as an outdoor operation, most of the persons inoculated were men and children. Few women were reached in this situation because of the purdah system and the social restrictions on women moving about in public. To overcome this difficulty, we set up special centers in buildings for women only. Attendance depended greatly on selection of the site, time of inoculation, and adequate publicity.

The experience of inoculating in urban areas was highly encouraging. With adequate planning, there is no doubt that jet injection can be successful in treating most of a population's men, women, and children in a minimum of time, whether in an emergency situation or in routine preventive programs.

The hats, or market areas, of Bengal also provide excellent opportunity to reach the maximum number in the minimum period. These weekly markets attract gatherings ranging from a few hundred to as many as 20,000 people, according to their size, location, and importance. In a central location in the hat, even without publicity, it has been comparatively easy to inoculate 500 persons an hour with one machine.

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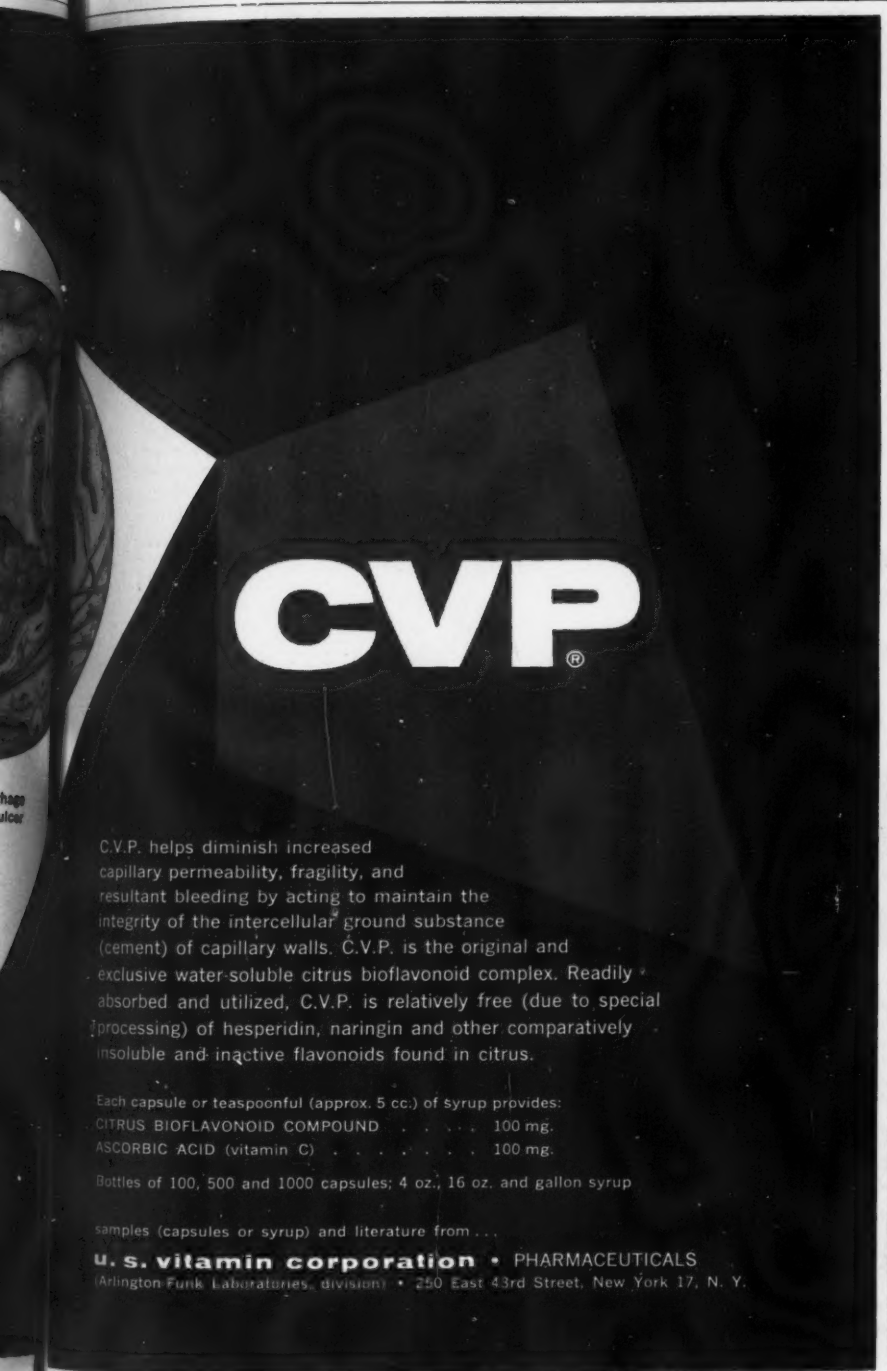
ecchymoses
menorrhagia
habitual and threatened abortion

The larger markets, such as the Ghior Hat located in Manikganj Subdivision, Dacca District, provide an excellent opportunity to reach many of the people who would be otherwise comparatively inaccessible and also at the highest risk. People come 40 or 50 miles to a hat to sell or exchange produce and animals. Many come by river boats, which constitute the major mode of transportation in the delta area. As most of these river people live on their boats and are constantly moving, it is practically impossible to reach them at any other time. The river satisfies practically all their needs for drinking, washing, and cooking water. All of the rivers are congested with these riparian ramblers.

People living on or near the rivers, and their animals, use them for all purposes. Latrines overhanging the banks are a common sight. There is a chronic threat of infection therefore to the people living on or near the waterways.

Even though most of the people at the hats are men and children, it is felt that, by the inoculation of this great mass of transients, it may be possible to break one of the more important links in the chain of disease, by means of the jet injector, the one instrument by which it is possible to inoculate enough of these persons quickly. The duration of these hats is only 1 day per week. If the people are not reached on that day they may carry infection throughout the Province.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INOCULATIONS IN RURAL AREAS

While there remains little doubt that the injectors can be used successfully in places, such as municipal areas and markets, where a great number of people congregate, the principal question concerns their utility in rural areas. In East Pakistan approximately 90 percent of the population of 46 million live in villages. It is estimated that of this 90 percent, at least 40 percent are using water supplies that are considered unsafe. These therefore are the population at greatest risk.

With this factor in mind we set up experimental mass inoculation campaigns in rural areas in different places throughout the Province.

Some of these were easily accessible by road, some by river in either launches or country boats, and some only by foot. All proved of value and brought many facts to light which will prove of value in future mass inoculation.

One campaign typical of rural East Pakistan from the standpoint of type of area, concentration of population, and transportation facilities was in Debidwar Thana, Tippera District. This was an area of average-sized villages accessible only by foot. From this thana we selected one union, a political land unit of from 8,000 to 12,000 population, and inoculated on a village-to-village basis throughout the area. The villagers were informed of the expected time of our arrival by the chowkidars, village officials who serve as registrars, night guards, and tax collectors, and the arrangements and selection of sites were left in the hands of the village leaders. The table shows the results of this controlled experiment. As previously stated, this area was typical as to terrain and people, and the results obtained were about the same as in other areas throughout the Province.

Many conclusions are apparent from this table and many more from observation during the inoculation periods. The total time consumed in this operation was approximately 32½ hours, or about four average working days. As only one machine was used in the operation, the average rate of inoculation was 1,340 per day per machine. Inoculators who had previously worked in this area reported the maximum number that could be done by one man with syringe and needle would be 100. So, despite the fact that these figures are small compared with those of urban areas, the injector was still doing the work of 13 men.

DISCUSSION

The data clearly indicate a great vari-

MASS CHOLERA INOCULATION, DEBIDWAR UNION, DEBIDWAR THANA, TIPPERA DISTRICT, EAST PAKISTAN

Village	Population	Inoculations					Inoculation time (hours)	Approximate travel time (hours)
		Men	Women	Children	Total	Percent		
Bhoshna	520	104	115	159	378	73	2¾	1¾
Champanagar	510	82	59	150	291	57	1	1
Chhota Alampur	660	57	35	85	177	27	1	¾
Debidwar	2,020	978	75	193	1,246	62	3	¾
Binaypar	300	23	49	60	132	44	1	1
Noma Bara	300	43	41	73	157	52	1	1
Balibari	500	59	72	146	277	55	1	1
Bara Alampur	1,200	126	61	237	424	35	2	1
Kanibil and Biniapara	620	223	154	209	586	95	2	1¾
Marichakandi	980	127	144	228	499	51	1¾	1
Bhinglabari	1,000	58	97	166	321	32	1	¾
Fatehabad	1,200	172	218	349	739	62	2	1¾
Shailchar	360	40	37	57	134	37	¾	¾
Total	10,170	2,092	1,157	2,112	5,361	52.7	19¾	13

ation in the percentages of persons inoculated in different villages, ranging from 27 percent to 95 percent. This could be traced to many different causes. In Chhota Alampur, Bara Alampur, and Shailchar, no previous notice had been given by the chowkidars. Because of this, many of the people were away from the village and working in the fields at the time of our arrival. In Bhinglabari, a village which is spread out over a wide area, it was raining hard during the time of inoculation and the villagers had great difficulty in reaching the site. Thus, in the four villages with the lowest percentages of inoculations, the poor showing could be traced to lack of notification, which can be remedied, and to weather, an unavoidable factor.

The cooperation and interest of the village leaders was another element which greatly influenced the success of the program in each village. In the combined villages of Kanibil and Biniapara, the leader was an energetic person who so fully believed in the program that he went personally from house to house through both villages before our arrival and urged the people to come forward. His efforts were rewarded by the inoculation of 95 percent of the population of these two villages. The percentage of inoculation in the other villages seemed to

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vary proportionately with the interest and efforts of the leaders.

This again is a controllable factor. If these leaders can be called together before a program and fully educated as to the need for inoculation, the success of the campaign will be assured. As these leaders are usually older, highly respected persons, the people of their villages in most cases will follow their advice without serious question. Although total education of all the people in this respect would be the ideal, we can still accomplish our purpose by reaching this small influential group.

As the purdah system is more strictly observed in the villages than in the cities, we were concerned whether the women would come forward to be inoculated. In view of this, the selection of the site of inoculation in the villages was of primary importance. We tried to select locations where the women would be protected from the eyes of men by a bamboo matting or screen, as they approached to be inoculated. We found that, although they would not present themselves where men were gathered, they apparently had no objections to being seen by the person giving the inoculations, accepting him as a professional person. In most of the villages, there was no great difference in the numbers of men and women inoculated.

The one exception to this was in Debidwar, where the site selected by the officials was on the police station grounds in the center of a large open area. There was no way in which the women could approach with protection from the eyes of the many men gathered there. Consequently few women came forward. This indicated that the site for inoculations must be selected with careful consideration of local customs.

We feel that the experiment was reasonably successful, since 52.7 percent of the population of the entire union were inoculated. We think, however, that the program could have been even more successful. Most of the factors that accounted for the low percentage of persons inoculated are remediable.

The experience at Debidwar is a fairly accurate picture of inoculations in rural areas. Some earlier campaigns were not so successful and a few later ones, through experience, were more successful. In these experimental mass inoculations extending over a period of 9 months, we have learned how to organize a program for the effective use of the jet injector in all sorts of difficult situations. We feel strongly, therefore, that these machines can be used effectively not only in fighting cholera here in East Pakistan but in the prevention of disease in any situation which calls for mass inoculation.

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Plans are presently underway to supply injectors in sufficient numbers to enable the men who are being trained to take over the major burden of mass inoculation in East Pakistan. When these plans have been realized, we will find a new horizon in the field of mass inoculation which may in time aid in the elimination of epidemics.

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McClellan, Eugene Karl, from North Sacramento, Calif., to Los Angeles County Osteopathic Hospital, 1200 N. State St., Los Angeles 33, Calif.
Miller, Lamar C., from Morley, Mich., to Route 2, Cortland, Ohio
Mirowski, Bruno Frank, from Detroit, Mich., to 4006 Fort St., Lincoln Park 25, Mich.
Modzinski, Leo, from Pontiac, Mich., to Hillside Hospital, 1940 El Cajon Blvd., San Diego 4, Calif.
Molea, John S., from Columbus, Ohio, to Detroit Osteopathic Hospital, 12523 Third Ave., Detroit 3, Mich.
Morrison, Phil, from 3233 N. First Ave., to 3223 N. First Ave., Tucson, Ariz.
Mossler, Jack E., from Long Beach, Calif., to 2420 Level Ave., Anaheim, Calif.

Nerthling, Robert E., from Erie, Pa., to West Side Osteopathic Hospital, 1253 W. Market St., York, Pa.
Newman, Donald D., from South Gate, Calif., to 3426 Warwick Ave., Los Angeles 32, Calif.

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Olson, Jack C., from 5224 N. Figueroa St., to 5625 Melrose Ave., Los Angeles 38, Calif.

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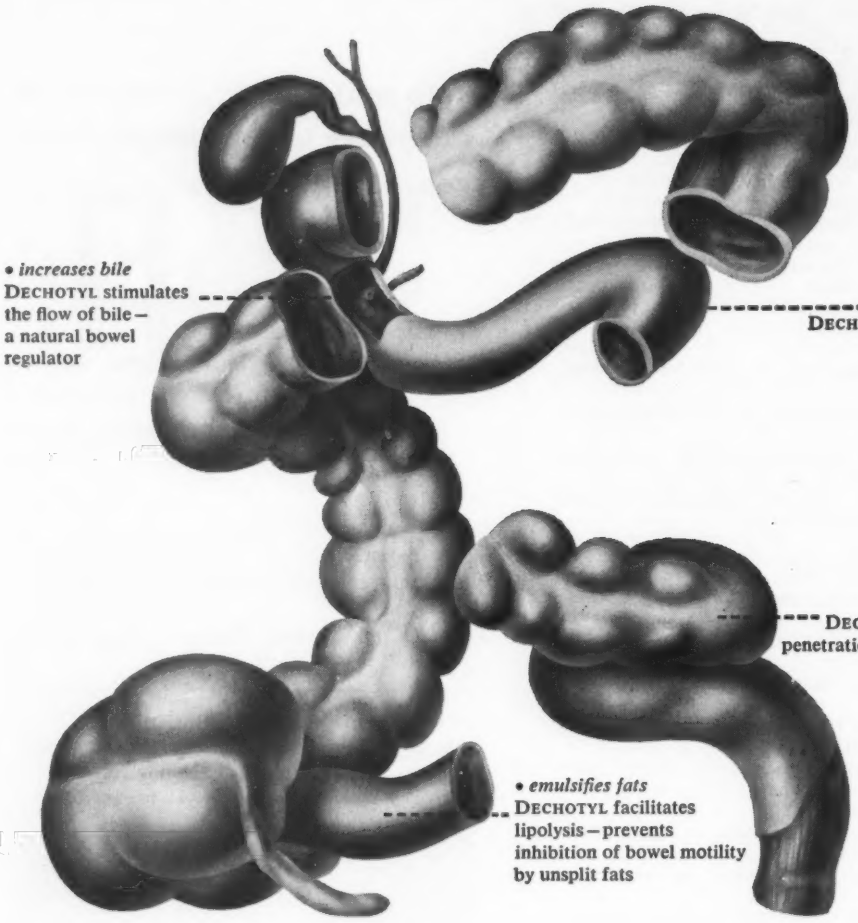
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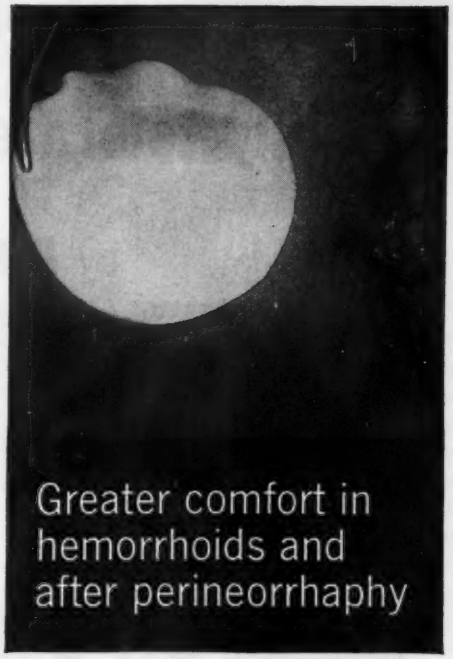

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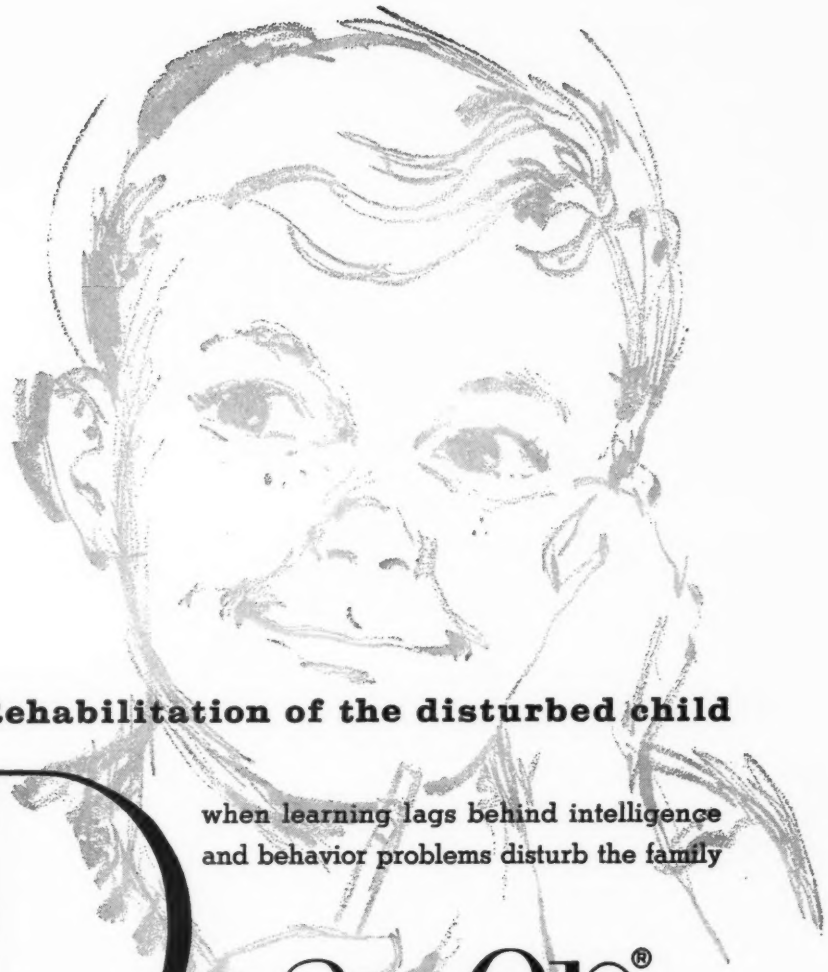

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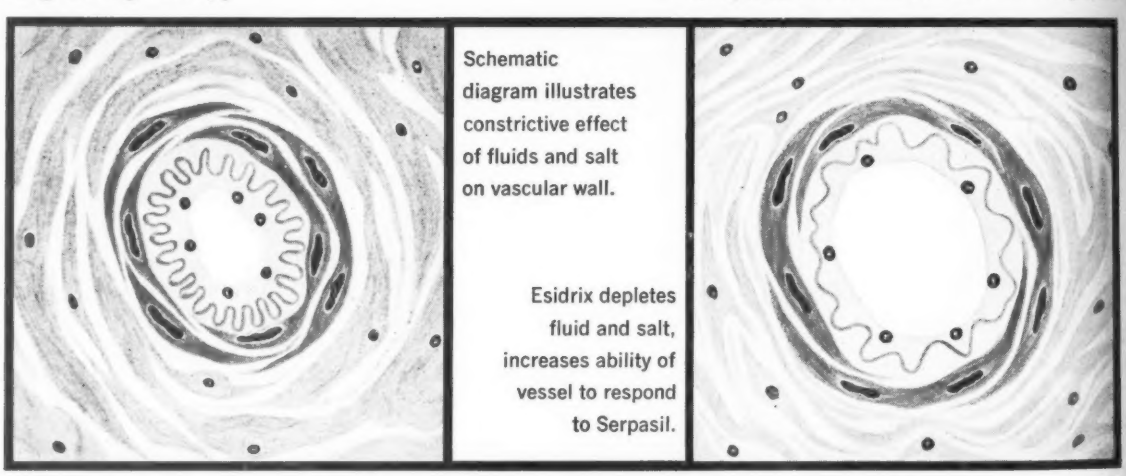

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